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RELATIONSHIP OF GROUP COUNSELING TO SUBSEQUENT ACADEMIC PERFORMANCE AT THE COLLEGE LEVEL.

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DESCRIPTORS- *ACADEMIC PERFORMANCE, ACADEMIC ACHIEVEMENT, *PERSONAL RELATIONSHIP, PERSONAL VALUES, *GROUP COUNSELING, *SOCIAL DEVELOPMENT, LOW ACHIEVERS, HIGH ACHIEVERS, COUNSELORS, *COLLEGE STUDENTS, MADISON, WISCONSIN, MINNESOTA MULTIPHASIC PERSONALITY INVENTORY, WECHSLER ADULT INTELLIGENCE SCALE, BARRETT LEONARD RELATIONSHIP INVENTORY

THE RELATIONSHIPS BETWEEN PERSONAL-INTERPERSONAL VARIABLES AND ACADEMIC PERFORMANCE WERE STUDIED. AN ATTEMPT WAS MADE TO DESCRIBE SOME OF THESE RELATIONSHIPS, AND TO DISCOVER PRACTICABLE MEANS OF FACILITATING THE KINDS OF GROWTH WHICH LEAD TO SOCIAL AWARENESS, PERSONAL COMPETENCE, AND ACADEMIC EXCELLENCE ON THE PART OF THE COLLEGE STUDENT. STUDENTS (ABOUT 300 IN ALL) USED IN THE STUDY WERE RANDOMLY SELECTED FROM HIGH-ACHIEVING AND LOW-ACHIEVING GROUPS IN A FRESHMAN ANTHROPOLOGY COURSE. THEY WERE ASSIGNED TO FOUR SUBGROUPS--(1) A COUNSELING GROUP DIRECTED BY AN EXPERIENCED GROUP LEADER, (2) A COUNSELING GROUP DIRECTED BY A SCHOOL COUNSELOR EXPERIENCED IN INDIVIDUAL THERAPY, (3) A CONTROL GROUP INVOLVED IN REMEDIAL STUDY, AND (4) A NO-TREATMENT GROUP. THE COUNSELING GROUPS MET TWICE WEEKLY FOR A PERIOD OF 8 WEEKS. PSYCHOMETRIC AND ACADEMIC ACHIEVEMENT DATA WERE GATHERED BEFORE AND AFTER COUNSELING. GROUP INTERACTION DATA WERE OBTAINED FROM TAPE RECORDINGS OF ALL COUNSELING SESSIONS. AMONG THE SIGNIFICANT RESULTS WERE--(1) ACADEMIC PERFORMANCE WAS NEGATIVELY RELATED TO RIGID AND AUTHORITARIAN ATTITUDES, (2) NO DIRECT RELATIONSHIP WAS FOUND BETWEEN GROUP PARTICIPATION AND EITHER ACADEMIC EXCELLENCE OR PERSONAL MATURITY, (3) HIGH-ACHIEVING STUDENTS TENDED TO BENEFIT MORE FROM GROUP INTERACTION THAN DID LOW ACHIEVERS, AND (4) GROUP COUNSELING TENDED TO BE ASSOCIATED WITH PERSONALITY AND CHANGES IN INTERPERSONAL PERCEPTION. (JC)

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Relationship of Group Counseling to Subsequent Academic Performance at the College Level

Cooperative Research Project No. OE 1417

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Section I.

Educational Implications of the Population Explosion: The problem on which the research was focussed

One of the most acute problems confronting educators today is that of successfully imparting knowledge despite overcrowded conditions. Individual attention and meaningful teacher-student interactions are virtually impossible for the vast majority of current elementary, secondary, and college classes. Concommitant with and directly related to these limitations is the problem to which this research is directed: the unravelling of some of the complex determinants of student performance in our rapidly changing educational world.

Recent studies in education, psychology, sociology, and related areas have pointed out clearly the fundamental relationship between psychological well-being and academic excellence. No matter what the academic potential of the student may be, he is more likely to work at his highest possible level if he has developed mature attitudes, a well-integrated personality, and a realistic set of goals. The study of academic performance can ill-afford to neglect such potent factors as those built into the social and psychological structure of the student's life. For this reason, we have concentrated here on three general areas: academic performance, inter-personal perceptions and interactions, and personality variables. Our object was to determine the relationships existing among these areas, and the means by which positive changes could best be facilitated. We planned to study changes in attitudes and other personality variables, and concommitant changes in academic performance; to encourage such change, we were interested in the effects of both counseling and a more direct tutorial approach.

Several procedural decisions came up early in the course of our thinking about the research. We had decided to study students' growth--academic, social, and personal--and how such growth could be encouraged. But the "encouragement of growth," we felt, was not something to be approached from an abstract, ivory tower point of view. Rather, we wanted to consider it in terms of the everyday capabilities and capacities of the modern school system. This emphasis on the practicality of our findings automatically ruled out elaborate and/or highly expensive apparatus, as well as procedures involving inordinate man-hours on the part of the teacher or counselor.

It was partly this latter consideration--the man-hours involved--and partly the great importance which we felt peer relationships and opinions have for the adolescent, which led us to use the small group rather than the one-to-one interaction. This small group interaction lies at the heart of the study: each of our experimental treatments has been carried out in a group setting. Not only does group treatment increase severalfold the number of students with whom the counselor and/or teacher can work, but it also allows the students to reap the benefits of meaningful interactions among themselves.

Another practical problem is that of the training needed by a group leader working with adolescents. Can the classroom teacher act as a "counselor," or should such duties be carried out only by those with more specialized training? And, if specialized training is needed, should it include further specialization in group leadership for those planning to work with groups? This question led us to include in the study two counselors with widely different degrees of group experience, as well as a discussion leader with no training in counseling.

A final variable which was felt to be important was that of previous achievement level. To utilize time most fully, one should know whether high achievers or low achievers respond better to one kind of interaction, and whether homogeneously achieving groups or groups of mixed achievement levels are more successful. Groups differing both in general achievement level and in homogeneity of achievement were used in this study in order to explore this aspect of group functioning.

This is an exploratory study to challenge the necessity of educational depersonalization as a consequence of the "population explosion." It is hoped that the research presented here will shed light on some of these dimensions of student achievement, both in formal academic areas and in the less tangible areas of personal and interpersonal development.

Section II.

Objectives of the Study

The objectives of the research have been discussed to some extent in the preceeding section. Presented below are the specific hypotheses which the study was designed to test.

A. Individual Changes. Directed group interaction leads to personal growth, and subsequent attitude changes, which will be reflected in the students' academic achievement level.

1. Group interaction breaks down rigidly formed perceptions in peer relationships.
2. Group interaction allows the broadening of personal and interpersonal relationships, which lead to more mature academic goals.
3. Group interaction encourages growth-producing experiences for the individual student in both emotional and non-emotional areas, freeing him for a more full utilization of his academic capacities.

B. Group Differences. Differences in group composition lead to different kinds of interactions, which may have differential effects upon the nature and rate of academic achievement change.

1. Students in homogeneously low-achievement groups will show more change, both in within-group interaction and in achievement level, than high-achievement students; but will show less change than low achievers in mixed groups.
2. Students in homogeneously high-achievement groups will show more change than high achievers in mixed groups; but will show less change than low achievers in either homogeneous or mixed groups.
3. Students in mixed groups will, on the whole, show the greatest academic change; there will, however, be greater individual differences in the mixed groups, with more individual students showing either significantly greater than or less than the mean degree of change for the total number of students studied.

C. Group Interaction. The nature of the verbal interaction within each group will be significantly related to the degree of positive change shown by students in that group.

1. Students who experience a high degree of empathy and openness from the group leader and/or other

members of the group will show greater positive change than students who do not experience empathy and openness.

2. Low-achievement students will respond more rapidly to the counseling situation than will high-achievement students and will show greater change in initial group meetings than in later meetings.
3. Individual change will be more highly correlated with autobiographical, psychometric, and rating data than with the amount of verbal participation in the group.

D. Effect of Counselor. Counselors experienced in group interactions will be more effective in the group settings than counselors experienced in individual interactions.

Section III

Related Research

Theoretical and empirical evidence both point to the existence of a relationship between personality adjustment and academic achievement. A study by Yeomans (1957), for example, points out this relationship among a group of college men. Several studies (Truax, 1961; Abell, 1959; Gross, 1960) emphasize the advantages of a group counseling approach over individual counseling, focusing on such factors as peer perception, utilization of interpersonal interaction, and economy. Studies of group counseling and group therapy reveal several variables affecting the outcome of counseling, and these variables seem to be relevant regardless of the type of counseling.

A study by Chambers (1957) relates school success to empathy, indicating that when scholastic aptitude is held constant, empathy is "evidently the differentiating quality which enables the student to have school success in spite of low scholastic aptitude". Other studies (Tomlinson, 1959 and 1961; Tomlinson and Hart, 1962) have indicated the importance of such variables as the ability to deal realistically with problem areas, and the flexibility of attitudes and personal constructs, in the process of constructive personality change. These kinds of psychological traits or abilities are related to competence in nearly every area of endeavor.

The need to utilize student-student relationships is stressed by such authors as McCrockey (1957), who points out that "students can and should be encouraged to teach other students", and Failor, who emphasizes the development of "self-directedness in a group". Webster (1958), in a study of group counseling with college freshmen, found that the "friendship-hostility continuum" changed positively over time, with students growing more friendly and less hostile toward each other. In this study, the length of time in counseling was a significant variable, further emphasizing the fundamental importance of the continuing interaction experience. Failor (1954) and Jensen (1955) also stress the possibilities inherent in the utilization of peer relationships.

Truax, in an extensive study of group psychotherapy variables, has found two counselor behaviors to be significantly related to therapeutic change. These behaviors are a) accurate empathic understanding, and b) openness and honesty in the counseling situation. Webster found that understanding on the part of the counselor decreased hostility among group members. It would seem that one of the most significant variables in the counseling situation is the degree to which the counselor is capable of accurately and honestly communicating with, and facilitating communication among, the members of the group.

From the above discussion, one would expect to find positive personality change and academic improvement among members of groups which have leaders skilled in the facilitation of open and honest communication, in which feelings are freely expressed and empathically received. Yet further studies point up the difficulties inherent in testing such a proposal.

Of particular difficulty is the variable of academic improvement. Mann and Mann (1959) found no differences in achievement test scores between their experimental and control groups immediately after counseling, but found significant improvement in the experimental group at a later testing. Broedel (1959) reports that group counseling may initially have negatively affected grades. In general, it appears that academic improvement is likely to show up as a long-term rather than a short-term concommitant of successful therapy; and must therefore be inferred (and/or predicted) from other indices.

Initial "decrement" on various personality measures has also been reported in connection with initial therapy changes. Gendlin, in a paper delivered at the 1961 APA convention, describes this phenomenon with relation to the client-centered approach, and Menninger (1958) outlines a similar effect in psychoanalysis. There seems to be a general loosening of defenses, an increasing ability to be critical of one's self, during the period in which a true therapeutic relationship is created.

The present research has brought together some of the hypothesized implications of group counseling and the empirical means whereby these hypotheses can be tested. The bibliography contains references dealing with the development, reliability, and validity of the various measures and scales which have been used; a more extensive bibliography, covering the general area of group counseling, can be obtained from the authors.

Section IV.

Gathering and Processing the Data

Subjects. The subjects used in the study were freshmen students at the University of Wisconsin. Seventy-two students were directly involved, randomly (see below) selected from high- and low-achievement groups of an integrated liberal arts program.* The subjects were arbitrarily selected, thus eliminating sampling and/or self-selection bias. Some studies have indicated that subjects who select themselves (e.g., volunteer) perform differently as a function of their wanting to participate. However, a study reported by Webster (1958) indicated that there were no significant group performance differences between volunteers and non-volunteers: therefore the mode of selection should not have affected the students' participation.

At the end of six weeks of instruction, students in an anthropology section (about 300 in all) were classified as high, middle, or low achievers on the basis of an examination over course material. The high-achiever group and the low-achiever group formed the pools from which subjects were randomly drawn. Twenty-four high-achieving students formed four homogeneous high-achiever groups; twenty-four low-achieving students formed four homogeneous low-achiever groups; and twelve high- and 12 low-achieving students formed four mixed high-low achievement groups. One of each of these sets of groups (high-achievement, low-achievement, and mixed achievement) was randomly assigned to each of four experimental conditions: a) counseling directed by an experienced group leader; b) counseling directed by a counselor experienced only in individual relationships; c) course material discussion led by an anthropology graduate student experienced in teaching; and d) proctored study sessions. (See diagram following)

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* The Integrated Liberal Studies (I.L.S.) program of the University of Wisconsin is a two-year course of study, within a four-year program, designed to provide a broad liberal arts foundation which is both solid and stimulating. First-year students in I.L.S. are enrolled in four basic studies courses and have one elective. In each of these four courses, one instructor meets the entire group of students in a lecture session twice weekly; he also prepares and grades all examinations. Thus, selecting the sample from one of the I.L.S. basic courses makes possible the comparison of progress among a large group of students with highly similar course committments.

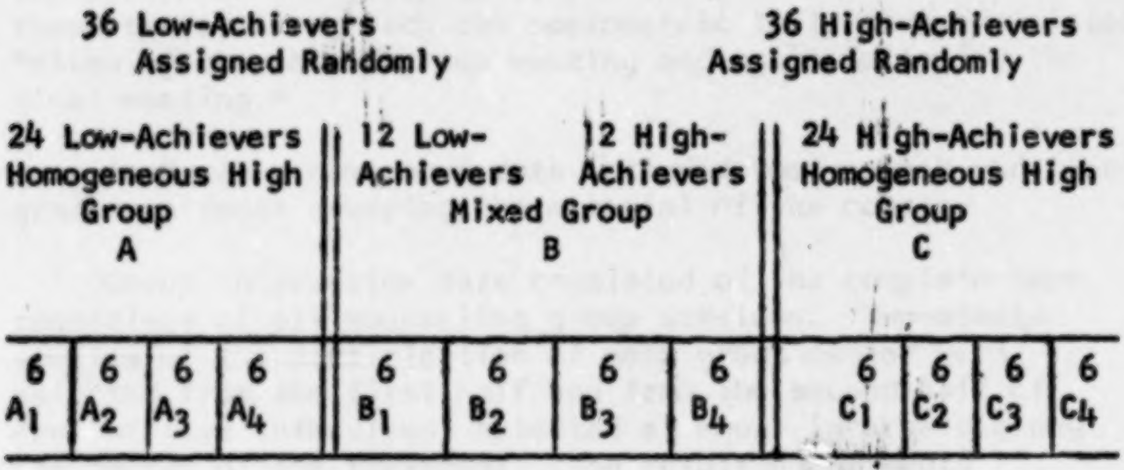

Illustration 1. Schematic representation of group composition, showing assignment of high- and low-achievement students and treatment groups

Legend:

A_1, B_1, C_1 - Counseling group with leader experienced only in individual interaction

A_2, B_2, C_2 - Counseling group with leader experienced in group interaction

A_3, B_3, C_3 - Discussion group--class material oriented

A_4, B_4, C_4 - Proctored study group

Treatment. Beginning with the seventh week of instruction, each treatment sub-group met twice weekly with its respective leader. for a total of seven weeks, or fourteen meetings in all. All of the counseling meetings were tape recorded.

Data. Data collected on the subjects can be divided into three major categories: psychometric, academic achievement, and group interaction. A tabular summary of this data is given in table 1.

Psychometric data include the following instruments: Minnesota Multiphasic Personality Inventory, Barrett-Leonard Relationship Inventory, Rockefeller 80-Item Personality Q-Sort, California F Scale, and a sociometric test. The MMPI was administered during the two weeks following the conclusion of the experimental treatment; in addition, MMPI scores obtained during the University of Wisconsin's routine pre-entrance testing in September were used. F Scales and Q-Sorts were administered following the first group meeting and again following the last group meeting. Relationship Inventories were filled out by each student with regard to the person in the group he liked most, the person in the group he liked least, and on the leader; these tests, along with the sociometric test, were administered following the second group meeting and again following the final meeting.*

Academic achievement data included twelve-week and final grades on tests covering the material of the course.

Group interaction data consisted of the complete tape recordings of all counseling group sessions. Two-minute samples of the participation of each group member were selected from the first half and from the second half of each of five interviews, selected at equal intervals along the course of the treatment. The resulting segments (allowing for attrition) were rated on Gendlin's EXP (Experiencing) Scale, van der Veen and Tomlinson's PES (Problem Expression) Scale, and Tomlinson's PC (Personal Constructs) Scale, based on Rogers' theory of personality development and the Rogers and Rablin Scale of Process Movement.

Preparation of segments. The preparation of the recorded counseling sessions for ratings presented many problems. As has been described, the design called for two two-minute segments for each subject in the six counseling groups at each of the five data points (one from each half of the session). The procedure for selection of these segments was further complicated by the criteria governing the quality of the verbal behavior during these two-minute segments; such limiting criteria were necessary if the ratings to be made for the segments were to be considered valid. Essentially, it was required that the subject speak at least two complete sentences; this was considered the minimum necessary for rating of content and expression. Because of the frequent instances of simultaneous speech, long group silences, monologs, etc., the selection of the segments proved to be one of the most difficult aspects of the research. It was decided that to facilitate identification of the speaker to be rated, two things would be done: 1) typescripts were made for each segment, and these bore only the conversation of the speaker to be rated, 2) each segment began with the voice of the speaker to be rated. These latter techniques were absolutely necessary because of the similarity of so many of the subjects' voices and inflections, and--as was mentioned before--the problem of overlapping speech.

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* Relationship Inventories and sociometric tests were not administered to the proctored study group members, since they had no opportunity for verbal interaction.

Both tape segments and typescripts were carefully edited for any identifying material, and coded to permit accurate recordings of the ratings.

The entire process of selecting segments for each subject was extremely laborious and exacting. The authors feel that for others planning to undertake a similar venture it is important not to underestimate the difficulties involved in both expenditure of time and overcoming obstacles inherent in the data. The person responsible for the selection of these segments spent well over sixty hours just in familarizing himself with the voices of the thirty subjects involved--before any actual segments were made. However, this initial investment of time proved to be of considerable saving as the task of segmenting progressed.

Once the segments and typescripts had been prepared, they were presented to the raters in random order. This was done for two reasons: 1) to minimize rater bias due to familiarity with the voices; and 2) to eliminate association between segments and the data points from which they were chosen. While the general order was random among all segments, the order for each rater was the same. The raters, working independently, assigned rankings of 1 to 7 for each of the three scales (see Appendix C); these scales were used by the raters in a randomly assigned order which differed for consecutive segments but which, again, was the same for both raters. The ratings thus obtained constituted the data used in the analysis of the tape recorded material.

Section V.

Analysis: Testing the Hypotheses

The analysis of the data will be presented with regard to each of the specific hypothesis groups set forth in Section V.

I. Personal growth and attitudinal changes as a result of directed group interaction.

1. Perceptions in peer relationships

The primary psychometric instruments by means of which group interaction variables were measured were the sociometric test and the Relationship Inventory. As may be seen from the copy of our sociometric test in Appendix A, students were asked to rank the members of their group (themselves included) on the basis of three things: a) likeability, the degree to which a person was likeable; b) worthiness of respect, the degree to which he seemed to command the respect of others, and c) comfortableness, the degree to which he seemed to be comfortable to be around. These will be referred to hereafter as the Liking scale, the Respect scale, and the Comfort scale. Analysis of the sociometric data included only the three groups meeting with the more experienced counselor, and the three groups meeting for discussion sessions. Second meeting changes in group membership in two of the three groups meeting with the less experienced counselor invalidated that set of sociometric data for purposes of analysis: therefore the comparisons were made among three counseling and three non-counseling groups. These groups were dropped from six members each to five members each, due to the attrition of two subjects: the thirty subjects thus used seemed to yield adequate data with regard to the hypotheses of the research.

First, in order to find out whether the three scales (e.g., Liking, Respect, and Comfort) were actually measuring different qualities, Pearson product-moment correlations were run on each subject for all scales with each other. Each subject gave three rankings to the other members of his group; he ranked them on Liking, on Respect, and on Comfort. These yielded three pairs of rankings for each set: Liking and Respect, Liking and Comfort, and Respect and Comfort. Taking in turn the rankings made by each student on the others in his group, correlations among each of these three scale pairs were computed. This yielded three scores for each student, representing the perceptual similarities he expressed between each pair of scales. Similarly, each subject received rankings on Liking, Respect, and Comfort from the other members of his group. Within the rankings received by each student, inter-scale correlations were again computed for each pair of scales.

All of the correlations were then converted (by means of Fisher's table) into Z scores. This normalized the data and allowed a standard analysis of variance technique to be used in comparing the amounts of inter-scale agreement. The rank-order nature of the sociometric data made this procedure necessary. Any comparison between either groups or scales, using means as a statistic, would have been inappropriate, since all the group means were fixed at the same value. That is, only six rankings, 1 through 6, could be assigned by each of the students taking the test, and therefore each group had the same mean. This also held for comparisons between scales and between treatments.

The Z scores obtained by the procedure described above represented the amount of agreement between pairs of scales used by one individual to rate his group members, and those used by the group to rate each individual. Tables II and III show the distribution of these scores.

Though we were unable to test statistically the differences between single scales, the Z scores thus allowed us to approximate such a test by using differences in intra-scale correlations as data. Both analyses of variance of these scores showed the differences between pairs of scales to be significant at better than the .01 level of confidence, with Liking and Comfort correlating higher than either Liking and Respect & Comfort and Respect. This indicates that the scales did measure different qualities, though Liking and Comfort seem to be rather closely related. Tables IV and V contain source tables for the analysis of variance on the two sets of scores, and table VI shows the means of the scales, groups, and treatments.

The correlation of one scale ranking with another on the sociometric test can also be considered as a measure of the degree to which students differentiate their appraisal of their peers. In other words, if student A ranks student B either high or low on all three measures, A is seeing B as a less differentiated, more "all black or all white" entity than is the student who ranks B high on one scale, low on another. Changes in the amount of inter-scale correlation, then, reflected changes in perceptual differentation by the students. The two analyses, scores given by each student and scores received by each student, explored respectively the range of differentiation achieved by the students, and the range of group differentiation accorded to the student. As can be seen in tables IV and V, there were some differences between the two; however, the differences were slight.

In neither analyses were there significant differences in interscale agreement overall between the two testing periods. The analysis using rankings received by each student (i.e., group differentiation accorded individual members, see table V) showed a significant group x treatment x scale interaction (p. .05). In the non-counseling groups, the relationship between the degree of differentiation and the achievement level was consistent for all scales: low achieving groups were less able to differentiate than were the high achieving groups. However, in the two counseling treatments, it was the mixed achievment group which differentiated least on two out of the three possible scale pairs, which the low achievement group showed the most differentiation on two scale pairs. Thus there did seem to be a difference in interpersonal perception as a function of group treatment among the various groups.

One further analysis was made with the sociometric test data. This dealt with the degree to which group members agreed on the status, or ranking, of each individual in the groups. The variance of each set of scores received by students from the other people in his group was computed separately for each of the three scales, and this was taken as a measure of agreement; greater agreement was indicated by less variance in an individual's scores. Using an analysis of variance (see table VII) a difference between achievement level groups again showed up. The high achievers showed the greatest agreement, the low achievers the next, and the mixed achiever groups showed the least agreement (p. .05). There was also a significant difference between these groups over time, with all of the homogeneous groups (e.g., the high achievement groups and the low achievement groups) increasing their agreement over time, and both of the mixed achievement groups decreasing in agreement over time (p. .05). Table VIII presents the mean scores for all groups.

To summarize the sociometric data, then, it is clear that changes did occur over time. Moreover, these changes were affected by treatment, and were further a function of the composition of the groups. Both the homogenity or heterogenity of the group, and the high-achievement or low-achievement status were factors in determining the extent and direction of change.

The Relationship Inventory, as mentioned above, was another psychometric instrument used to explore some of the dimensions of interpersonal perceptions in the group. This Inventory was designed to measure the perception by a psychotherapy client of certain attitudes on the part of his therapist. Rogers postulated, however, that these attitudes can exist in relationship other than that of formal psychotherapy and that the meaningfulness of the relationship will depend in large part upon the degree to which they are present. In accord with this hypothesis, we predicted that changes would occur in Relationship Inventory scores as a function of experimental treatment. Section VII details the three sets, or classes, of Relationship Inventories filled out by group members: one with regard to the person most liked in the group, one with regard to the person least liked in the group, and one with regard to the group leader. These three classes will hereafter be referred to as "Most," "Least," and "Leader" tests.

Each Relationship Inventory has four scales: Positive Regard, Empathy, Congruence, and Unconditionality of Regard. These scales represent "conditions" which Rogers has hypothesized to be necessary and sufficient for therapeutic change. The higher the score on any scale, the more the person being reported is perceived by the testee to exhibit that quality.

First, analyses of variance were run over all groups, treatments, and classes (the latter refers to the "most liked", "least liked," and "leader" sets of data) for each of the four scales. Tables IX-XII present these analyses. As can be seen from these tables, the "classes" effect was highly significant in all four analyses. Also, in three of the four scales, the classes x experimental treatment interaction was significant. Examination of the scale means of the groups shows that, for the scales where the interaction was significant, the more experienced counselor was consistently rated highest (higher than "best-liked" or "least-liked" person) while the less experienced counselor was consistently rated lower than the "best-liked" person. It would seem, then, that these two counselors were perceived differently, and that this difference was relatively consistent over three of the therapist "conditions".

Being particularly interested in changes over time, which did not show up as significant effects on these preliminary analyses, we computed the means for each class and scale, across all groups and experimental treatments. These means are presented in table XIII. A simple analysis of variance among the change scores thus obtained (table XIV) yielded an F of 20.5, with 2 and 9 degrees of freedom. The trend was consistent over all scales: the well-liked people were seen as increasing the conditions which they offered, while the less-liked people (and, to a lesser extent, the group leaders) were seen as decreasing these conditions. In other words, if the perception of these conditions did indicate how well people were liked -- and the great differences between best-liked and least-liked Inventories seem to bear this out -- then first impressions of liking or not liking were confirmed and strengthened over time.

The achievement level of the groups also played a significant role in the changes over time for the Relationship Inventory scales. Consistently for all but scale R, the high achievement groups' mean scores went up over time (more favorable perceptions), the mixed groups either went down or held steady, and the low achievement groups' means went down (less favorable perceptions). Though this trend held for all scales, the differences were significant on only one (table XII). On scale C (table XI) there is a further ramification of the trend: while it held for both counseling groups, it was exactly reversed in the discussion groups, with the perceptions of the low achievement group becoming more positive and of the high achievement group becoming less so. Again, on all but scale R, the relationship among these three variables (experimental treatment x group composition x time) was consistent. The one exception to the pattern is the low achievement group meeting with the experienced counselor; their mean score went up over time.

Thus, the overall evidence of the Relationship Inventory scores is that perception of the "conditions" (e.g., attitudes facilitative in forming meaningful relationships) offered by others did change over time, and that this change was a function both of the kind of group in which it was being measured and of the experimental treatment to which the groups were exposed. In general, first impressions seemed to be strengthened rather than changed. Members of low achievement groups, on the whole, tended to perceive less positive attitudes as time wore on, while the reverse was true in high achievement groups. However, this latter relationship may well have been a function of the experimental treatment, since it seems to have held only for the groups which were involved in counseling.

2. Academic goals and attitudes

Originally it was planned to use bibliographic material (e.g., autobiographies written by the students as a part of their course obligations) as a means of assessing personal and academic goals. Unfortunately, due to the structure of the actual course materials, it was impossible to obtain this data. Although we were left with no direct evaluation of academic goals, one of the other instruments which was used yields an assessment of attitudes which, in turn, has been found to relate directly to academic performance. This is the California F scale, originally designed as a measure of authoritarianism, but which has subsequently been found to be a rather sensitive indicator of attitudes involved in academic performance (Cohn, 1957; Titus, 1957). The evidence has been consistent: students who do well academically tend to score lower on the F scale than do students whose academic performance is poor. Our own data bore out this relationship quite convincingly. Negative correlations between F scale scores and academic grades were highly significant, and the trend held for two of the three correlations with F scale change scores (table XV).

Table XVI presents the analysis of variance of F scale scores over all groups and experimental treatments. Looking first at the groups main effect, we find the expected significant difference between high achievers and low achievers: high achievers had lower F scale scores than did low achievers.

There was no consistent change over time, as indicated by the non-significant trials main effect. However, the trials x leaders interaction was significant, indicating that change over time was a function of experimental treatment. Examination of the means of the two counseling groups shows that the scores for the members of the more experienced counselor's groups went down, while the scores for the less experienced counselor's groups went up. In other words, authoritarianism (as well as some rather ill-defined "anti-academic" attitudes) tended to decrease as a function of group counseling with the more experienced counselor, while they tended to increase in the groups which met with the less experienced counselor. The increase in authoritarianism also held for the discussion groups; the study groups, however, showed an unexpected decrease. While the magnitude of the changes in the study groups was less than that of any other experimental treatment, it is nevertheless curious that these changes should have occurred at all. Further research will be needed to indicate whether the study group change is a valid result or merely a sampling artifact.

3. Personal growth

"Personal growth" here includes not only the kind of attitude change reflected by the F scale, but also to personality integration, self esteem, etc. Both the MMPI and the Q Sort are directly relevant to this area.

MMPI scale data were converted to t scores to permit comparison among all scales, and an analysis of variance was run across all the converted MMPI scales (table XVII). The great differences among the scales, even after conversion to t scores, is reflected in the highly significant scales main effect. There were no other significant main effects. Several of the higher order interactions, however, were highly significant. In these significant interactions, the difference between the more experienced and the less experienced counselor was striking. Consistently, their groups moved in opposite directions; e.g., if the more experienced counselor's groups went up on scale A over time, the less experienced counselor's groups went down, and vice versa. The same kind of relationship was true for the high achieving and/of the low achieving groups: for scales on which high achieving groups went up, low achieving groups went down. This was true for all but two scales, Pa and Pd. Moreover, the scores of the low achievers went down on all but one scale, while the general trend of the high achiever groups was upward.

Since there were such large differences among the various scales, it was decided to run a separate analysis of variance for each scale. These were generally unproductive, due at least in part to the loss of a large number of degrees of freedom in the smaller analyses, and are not presented here. The D scale, however, did produce some interesting results (table XVIII). We were particularly interested in this scale, since Kaufmann (Basic Readings on the MMPI) maintains that it is the most sensitive to clinical change. Here all of the trials interactions were highly significant. The high achievers and low achievers followed the expected pattern, with the scores of the high achievers groups going down and of the low achievers groups going up. The more experienced counselor's groups tended to increase their scores while the less experienced counselor's groups tended to decrease theirs. Again, we see the striking differences in the reactions of the more and the less experienced counselor's groups; and in the changes among the high achievement and the low achievement groups.

It is difficult to assess the meaning of these changes in terms of the actual experience of the students involved. The D scale, according to Kaufmann, is primarily an indicator of depression and related anxiety factors. If this is true, why did the score go up for the groups meeting with the more experienced counselor and down for the groups meeting with the less experienced counselor? One possible explanation is that therapy had begun to occur in the more experienced counselor's groups, with concomitant loosening of responses and freeing of anxious, self depreciating statements. This hypothesis is supported by the Q Sort data and by the analysis of the tape-recorded interviews (see below).

Table XIX presents the analysis of variance of the Q Sort scores. These scores were obtained for each subject by computing the correlation between the subject's sort and the "ideal" sort compiled by the test authors. The correlations were then converted to Z scores, normalizing the data, and a final conversion factor eliminated decimals in order to facilitate computation. There was, in this analysis, a significant overall difference between pre- and post-testing, with the second Q Sort correlating less well with the "ideal" than did the first. The significant trials by experimental treatment interaction indicates that the groups meeting with the more experienced counselor changed more than any others. Here again we find that the direction of change was not that which one might, at first thought, have expected. The movement was not toward a more "ideal" view of oneself, but rather toward a less self-acceptant picture. The comments above, regarding the MMPI, may be applicable to changes here as well: it seems reasonable to suspect that the negative-seeming changes on the Q Sort are actually indicative of the general loosening of perceptions, and the willingness to admit negative things about oneself, which are commonly associated with the initial phases of therapy.

Returning, now, to the original hypothesis: the question of changes over time was considered with regard to three general areas. Interpersonal perception changes, maturing of goals, and personal growth were all predicted as a function of directed group interaction. Section IX will deal more fully with the implications of the analyses discussed here, but with reference to these three areas it is possible to summarize briefly what did occur. Interpersonal perception changed over time, although the changes were more in the direction of strengthening rather than weakening original impressions. There was some indication that counseling groups tended to perceive more positive attitudes on the part of others after the counseling experience. Academically related attitudes changed also, and here there was definite evidence that the more experienced counselor's group underwent more positive attitude change. Finally, the evidence of the so-called "personality tests" is consistent in the direction of greater negative change on the part of members of groups meeting with the more experienced counselor; this may, however, indicate the anxiety-producing effects of the initial stages of therapeutic change.

II. The effect of differences in group composition and treatment upon academic achievement change.

The second set of hypotheses was primarily concerned with the ways in which actual academic performance was influenced by the various experimental procedures. Table XX presents the analysis of variance across experimental treatments and groups for 12 weeks and final grades. Six weeks grades, being a selection criterion, were not included in this analysis. Since the 12 weeks test and the final exam had different ranges of possible scores, and hence probable heterogeneity of variance, they were converted to Z scores for the analysis.

The table shows a highly significant between-groups difference; this was in the expected direction, with high-achiever groups doing better than low-achiever groups, and the mixed groups falling between the two extremes. This result provides a validation of our selection procedure, inasmuch as our "high achievement" and "low achievement" people did turn out to be exactly that on subsequent classroom examinations.

There were no other significant relationships for this analysis, contrary to our hypothesis. The trials x groups interaction just missed significance; further examination of the data indicates that the implication, though not statistically significant here, may have been a true one. Consistently over all treatments, the low achievers tended to improve their academic performance, while the high achievers tended in the opposite direction. This seems most reasonably attributable to a "regression to the mean" phenomenon, clearly to be expected in a sample of this size, and is further evidence that the experimental treatment had little or no effect on academic performance.

In order to check the differential effects of homogeneous and heterogeneous groups on the two achievement levels, t tests were run comparing homogeneous-heterogeneous pairs at each level in all experimental treatments. Again, no significant differences were found.

It thus seems clear that, with reference to short-term performance, there was no relationship between academic achievement and any experimental treatment. The six weeks test grade is a discouragingly valid predictor of whole course performance.

III. Changes in the quality of the verbal interaction of the Counseling Groups as a function of group leadership and achievement level.

This section of the hypotheses deals with the nature of the verbal interactions within each of the counseling groups. The instruments used to assess this verbal behavior were three "Process" scales: The Experiencing Scale (EXP), The Problem Expression Scale (PES), and the Personal Constructs Scale (PC). These three scales have been derived from Rogers' theoretical formulation of the process of constructive personality change. Rogers and Rablen developed a global scale of "Process Movement" which contained seven strands or constructs. The three scales used in this study were based on three of these constructs. The Experiencing scale, developed by Gendlin (1961), measures the degree to which the subject is immediately aware of what he is experiencing. The Problem Expression scale, developed by van der Veen and Tomlinson (1960), measures the degree to which the subject is able to recognize and focus upon his problem areas. The Personal Constructs scale, developed by Tomlinson (1961), measures the degree of flexibility associated with various topographical areas as introduced by the subject.

Reliability of Ratings: The reliability for the two raters on each of the scales for each data point, as well as over-all, is given in Appendix A. In general, the reliability between the two raters tended to be highest at both the initial and the final data point (this corresponds to the second and the last counseling sessions).

1. Empathy and openness of the leader as related to students' positive change

This hypothesis, which was essentially a comparison between the therapeutic conditions offered by the counselors to their groups and the levels of process change achieved by these same groups, was not directly testable. The added investment of time and technical assistance required to process the segments needed for the rating of the counselors made such an analysis unfeasible.

2. The relationship of academic achievement to process change in the counseling sessions

Data relevant to this hypothesis was analyzed by means of two statistical procedures, t tests (for which a priori it had been divided to use the one tail test), and repeated measures analyses of variance (See Appendix A).

T Tests:

Experiencing scale: T tests were run for the three achievement-level groups with each of the two counselors. It was found that the two high-achieving counseling groups were not significantly different at the first data point on the EXP scale. This would indicate that both groups were initially about equal in their ability to react experientially; this ability theoretically represents a capacity for meaningful interaction and positive personality development. However, the more experienced counselor's high-achiever group was significantly higher than the less experienced counselor's high-achievers when EXP was rated at the last data point. It thus seems that the group work experience of the counselor was an important factor in helping to develop feelings of self-awareness in the group members. The low achievement-level counseling groups were also not significantly different in their initial EXP ratings as a function of the experience of their group leader. But, again, it was the experienced counselor's group which was significantly higher at the last interview (p. .05) See table XXV.

The mixed achievement-level counseling groups were not significantly different in their initial EXP ratings but the pattern of positive personality change with the more experienced counselor was continued.

For the mixed groups, the pattern continued: there was no significant difference in initial EXP ratings but the more experienced counselor's group improved more over time.

The data would seem to indicate that the counselor experienced in group work is more apt to provide an atmosphere conducive to greater insight and self awareness as defined and measured by the Experiencing scale.

Problem Expression scale: The high achievement-level groups were significantly different on the initial interview in their ratings for the PES scale, with the more experienced counselor's groups showing significantly higher ratings (.025; see table XXVII). This relationship between the two groups was upheld in the comparison of final interview rankings, where the more experienced counselor's group was again significantly higher (.005; see table XXVII).

The low achievement-level groups showed no between groups differences in either the initial or the last interview scores for PES (see table XXVIII).

The mixed groups were not significantly different initially; however, the more experienced counselor's group had significantly higher (.005; see table XXIX) PES scores at the last interview. Both groups showed a significant increase between first and last interviews. Thus the less experienced counselor as well as the more experienced counselor were able to facilitate the recognition and discussion of problem areas.

It can be seen from tables XXVII, XXVIII, and XXIX, that the experienced group counselor is generally better able to help develop problem awareness and exploration than is the less experienced counselor, since the process levels achieved by his groups are consistantly higher than those of the groups meeting with the less experienced counselor. The terms are used as defined and measured by the Problem Expression scale.

Personal Constructs scale: The high achievement-level counseling groups did show a difference in the initial interview ratings for the PC scale. The more experienced counselor's group was significantly higher (.10; see table XXX) than the less experienced counselor's group. This difference was consistent over time, and at the last interview the experienced counselor's group was still significantly higher (.005) than the less experienced counselor's group. In addition, the more experienced counselor's group showed a significant increase in PES scores between their first and their last interview.

The low achievement-level groups were not initially rated as different on the PC scale. However, the less experienced counselor's group was significantly higher (.01; see table XXXI) than the more experienced counselor's group. In addition, the less experienced counselor's group showed a significant within-group change over time as indicated by a comparison of first and last interview scores.

The mixed groups showed no initial difference in PC scores. However, there was a significant difference in the scores for the final interview: the more experienced counselor's group received the higher PC scores (.005, see table XXXII). There was a within-group positive change over time for the more experienced counselor's group; the degree of improvement was significant at the .01 point.

These findings would tend to support the previously mentioned findings; namely,that the more experienced counselor is better able to foster a change in group members toward greater flexibility of attitudes and perceptions than is the less experienced counselor. However, the general picture presented by the t tests seems to feature several factors: 1) the effect of some previous experience with groups in counseling does seem to be particularly important; 2) although the level of academic achievement is not necessarily a predictor of degree of improvement in counseling, it would appear that the low-achiever groups are not as apt to improve as much as either the high achievers or the groups composed of both high and low achievers. These factors present some puzzling aspects. For example, is it the presence of the high achievers in the mixed groups that provides the incentive for change among the low achievers in the same group? If so, what then can be said of achievement level, at least for the lows, as a predictor of degree of personality development?

Analysis of variance:

A repeated measures analysis of variance was done over all data points for all process scale scores. Significant main effects included: 1) intervals, which was significant at the .05 level and which indicated a significant change in process scores from the first to the last interviews for all subjects who experienced counseling; 2) leaders were significantly different (.10 level) with the more experienced leader's groups receiving significantly higher process scale ratings than the groups meeting with the less experienced counselor; 3) there was a significant difference (.01) among the three scales--EXP, PES, PC--which would indicate the independence of the scales as instruments in measuring different aspects of personality change and development. There was no significant raters main effect.

Of the significant second-order interactions, that of intervals by groups seems quite important. This interaction was significant at $<.01$ level and indicates that the high achievement groups tended to be highest in over-all process level at the initial and again at the final counseling sessions (see Table 34). The intervals by scales interaction was significant at the $\leq.01$ level and indicates that the PES scores were consistently higher over all interviews, with PC next and EXP third (see Table 35). One of the most significant of the first order interactions was that of intervals by raters; this was significant at the .005 level. This is a difficult interaction to interpret, since rater number one rates higher than rater number two for the first two data points and then there is a reversal for the last three data points (see Table 36). Since the segments representing these intervals were presented in a random order, and in the same random order to each of the raters (working simultaneously) it must be supposed that something occuring within the content of the segments was responsible. It becomes scarcely more than speculation as to what specific behavior evoked this change in the raters' judgments.

The leaders by scales interaction was significant at the .025 level and indicated that the more experienced counselor's groups received consistently higher scores on each of the three process scales than did the groups meeting with the less experienced counselor (see Table 37). The scales by raters interaction was significant at the $<.005$ level and indicated that rater one rated both PC and EXP higher than rater two, but that rater one rated PC consistently lower than rater two. This is another finding which is rather risky to interpret and can best be attributed to rater set.

Of the significant second-order interactions perhaps the most important is the interaction between groups by scales over time ($<.01$). The tendency was for the higher achievement counseling groups to have higher scores at the early session and again at the late sessions. The interaction of raters' assignment of scores for the different groups over time presents another problem in interpretation: this achieved significance at the .05 level, with rater two tending to rate all groups higher than rater one over the first two data points, but lower for the third and forth data points and higher again for the fifth data point (see Table 40). The interaction presents interpretational problems similar to that of intervals by raters, and again it would seem that the answer to this rather puzzling relationship may rest with a change of set in either one or both of the raters, or difference in the range of scores used by each of the raters.

While third-order interactions have yielded some significance, the explicating value of these is questionable. In summary, then, it would appear from this analysis that the more experienced group counselor is better able to encourage positive process change in the members of his groups, regardless of their academic achievement level. It also appears that the problem of rater set does enter into the interpretation of scale score assignment and that the most meaningful understanding of this data may well come from those interactions which represent the pooled scores of the raters - e.g., leaders by scales, intervals by groups by scales etc., - rather than interactions which depend upon each of the raters' scores separately.

It would seem, finally, that group counseling with a well trained counselor, regardless of the amount of experience he has had specifically with groups, does result in positive personality change in at least three dimensions of personality. However, if there is previous experience with groups, the likelihood is of a greater degree of personality change.

IV. Differences in group performance as a function of counselor experience.

Section III has exhausted the evidence in support of this hypothesis.

Section VI

An Overview: Inferences and Implications

The previous sections of this report have dealt at length with the various hypotheses and the results of analyses employed to test these expectations. Because some of the hypotheses have been statistically upheld and others refuted, and because some of the findings have been "almost-but-not-quite-significant" or significant in an unexpected direction. A discussion is presented here of some of the areas which the authors feel to be of particular interest and importance.

1. Perceptual Rigidity:

It had been expected that the high achievement groups would be less rigid in their perceptions both toward others and toward academic goals. This was tested by several instruments. The sociometric test indicated that high achievers as a group tended to be less rigid in their peer perception while the low achievers tended to be more so. Now, when counseling treatments were considered in conjunction with this concept of perceptual flexibility it was discovered that it was the low achievers who showed the greatest ability to differentiate perceptually among their peers, with the mixed group next and the high achievers last. Thus, it seems that the effect of counseling was to encourage greater discriminatory skills through the interaction, which effect was most noticeable within the low achieving groups. This of course does not explain why the high achievers tended to go down.

It was believed that there was another aspect of peer perception which could be tested by the sociometric test; this is the commonality of peer perception. It was found that the high achievers tended to agree more on their evaluations of others within their group than did the low or the mixed groups. Over time the tendency was for the two homogenous groups (the high achievers and the low achievers) to become more in agreement with others in their group than did the members of the mixed achievement groups. There does not seem to be a significant relationship between counselor experience and the amount of flexibility of peer perception and/or the amount of agreement of peer perception in the group.

The F scale was another instrument expected to indicate the degree of perceptual rigidity. It was expected that the high achievers would have lower scores on this test than the low achievers. Over all, regardless of experimental treatment, this expectation was borne out: the high achievers tended to be lower on the F scale than did the low achievers. When experimental treatment was taken into consideration it was found that the more experienced counselor's groups tended to go down more than did the less experienced counselor's groups; that is to say, the tendency was toward a reduction in authoritarianism - a relaxation in a form of perceptual rigidity. This direction was also found among the groups meeting in tutorial sessions (although to a lesser degree). It becomes somewhat difficult, therefore, to attribute this particular type of change specifically to any one experimental treatment; it is entirely possible that the process of constructive interaction, regardless of the leader, is all that is necessary for a reduction in authoritarian/rigid perceptions.

The Q-Sort is an instrument indicative of perceptual attitudes toward the self. This test was administered, as were the others, on a pre and post basis. It was found that at the post-testing there was, for all groups, a less positive relationship between the way the students perceived themselves as compared to an "ideal" self. When the groups were considered within experimental treatments, the groups meeting with the more experienced counselor showed the greatest amount of dissatisfaction with themselves. The authors feel that this may mean that one of the results of counseling with a more experienced group counselor is to intensify the development of critical insight, which may initially be stimulated by the act of becoming a group member but which is contingent upon the quality of leadership for its development.

The Relationship Inventory was used as a further indication of perception. The high achievers tended to give high ratings on the Relationship Inventories they filled out on peers and the group leader; the low achievers tended to give lower scores (less favorable impressions) and the mixed groups tended to remain about in the middle or to give lower scores. While pattern of rating for the three groups held over the four scales built into the Relationship Inventory, the pattern was statistically significant for only one of the scales: Congruence. Within the experimental treatments, those groups meeting with the more experienced group counselor deviated from the over-all pattern: here the low groups went up over time, that is, they moved in the same direction as the high achievers, while the mixed group stayed either in the middle or tended to go down. The most unexpected result concerned the discussion groups where it was found that the low achievers tended to go up over time in their positive perceptions of others and the high achievers tended to go down over time in their perception of others.

Analysis of the taped interviews provided another measure of perceptual flexibility. This analysis applied only to the groups participating in the counseling sessions. The Personal Constructs scale, as defined in Appendix C, yields as estimate of the degree of perceptual rigidity of the subject. All groups (high, low and mixed) meeting with the more experienced counselor received higher scores on the PC scale than did the groups meeting with the less experienced counselor. Moreover, the high and mixed achievement groups showed a significant positive change over time in the PC ratings given to them.

2. Academic Performance:

It had been hypothesized that there would be the greatest degree of academic change in the mixed groups and that the quality of the personality changes within the counseling groups would be reflected in changes in academic grades over time. Neither of these hypotheses was borne out. What was found was that the absolute level of academic performance as measured by the grades at 6 weeks (the criterion for high-low classification), 12 weeks and the final examination placed the high achievers still highest with the mixed groups next and the low group lowest. However, when the relative positions are considered; that is, the direction of change in grades, it was found that the low group tended to go up over time while the high group tended to drop: this trend was not significant.

3. Level of Academic Achievement:

It had been hypothesized that the low achievement level groups would show more change than the high achievers on the personality variables measured by the Experiencing, Problem Expression, and Personal Constructs Scales. This hypothesis was not borne out by analyses of these scale ratings. In fact, the mixed and high achiever groups would appear to have the highest range of scores, as well as the greatest degree of overall change. While there are exceptions to this within a given scale and/or data point, the trend holds true for the data as a whole.

The psychometric tests, too, tended to indicate that the high achievers benefitted most from the experimental treatments. High achiever groups in general showed more change than did low achievers. Moreover, high achievement group movement tended to parallel the kind of movement attributed to the influence of counselor experience -- e.g., in the direction of more positive therapeutic change.

The effects of achievement level, however, are complicated by the homogeneity - heterogeneity variable. This is particularly evident in a comparison of Process scale and Relationship Inventory data. Mixed (heterogeneous) groups tended to behave like high achievement groups on the Process scales, while they performed even more poorly than the low achievement groups on the Relationship Inventory. It would seem that, in terms of verbal participation, the presence of high achievers may have acted as a stimulus to the low achieving students. However, this influence does not appear to have generalized to the more individual and autonomous behaviors involved in the paper-and-pencil tests.

4. Counselor Experience:

The general hypotheses had predicted that there would be greater positive change in groups meeting with the more experienced counselor. The data have generously supported these hypotheses. However, it is difficult to see clearly the relationship between two of the independent variables, counselor experience and group achievement level. Are they completely independent, or are they related through the interactive processes of the group? Moreover, is the issue a theoretical one or the more clear-cut methodological problem of confounding?

An example of this ambiguity can be seen in the Relationship Inventories. Here, as has been discussed, there were consistent relationships between changes over time and both counselor experience and group achievement level. Yet the real nature of the interaction between these two variables is not clear from the data.

In other instances, different sections of the data seem to contradict each other. For instance, the sociometric material showed no differences in amount of change as a function of counselor experience, while the analysis of the tape recorded data clearly indicates the opposite result.

One possible clue to this relationship is indicated by the MMPI D Scale findings. The D Scale showed a distinct difference in the direction of change over time in the scores of the groups meeting with the different counselors. Those meeting with the more experienced counselor tended to increase their scale scores (indicating greater anxiety-associated and depressive attitudes) over time, while those meeting with the less experienced counselor tended to decrease their scale scores over time. Since the D Scale is often an indicator of change associated with therapy, it may well be that the groups meeting with the more experienced counselor were actually on the brink of some rather significant counseling areas which were terminated as a result of the time-limited nature of the research.

If this is true -- that the more experienced counselor was able to initiate in his groups a therapeutic experience which time limitations did not allow him to carry to completion -- the achievement level dimension can be seen as relating both to the quality and to the speed of development of the interactive process. "Discrepancies" in the data may then be seen as a function of the specific aspect of the individual changes (e.g., immediate interaction changes, personality changes arising out of new social perceptions, etc.) which are being measured.

It should be clear, from the above discussion, that the authors feel the variable of counselor experience to be a primary factor in the changes which occurred among the various groups. Subjective appraisals from the students, the raters, and the counselors themselves have heightened this impression. However, as stated below, further research will be necessary in order to clarify the question of confounding of effects, and to delineate the parameters of counselor experience effects within the framework of the different achievement levels.

5. Implications for Further Research:

Clearly there are areas in the research findings which are difficult to interpret and which might be decisively resolved with further investigation. Chief among these are:

(1) The nature of the interaction between achievement level and counselor experience. This could be interpreted more effectively if a third counseling group could be arranged which would meet without a leader but with directions to record and to discuss topics of interest to them. The orientation would be essentially the same as the counselors gave their groups in the first meeting. This would indicate whether meeting together - interacting per se - would serve to evoke personality change herein associated with counseling.

(2) Lack of objective measures of counselor behavior within the interviews has left the question of specific counselor behavioral differences unanswered. With a separate analysis of the counselor's behavior in the meetings there would be a more exact understanding of the interaction between counselor training and positive change.

(3) The questions of the effect of experimental treatments on academic performance could best be answered by a follow-up study. This would allow any latency to take effect. A second semester follow-up should be adequate to expand this area.

(4) The validity of the change scores as an index of personality change could be enhanced by a follow-up study. This would indicate the permanance of changes apparent at the conclusion of treatment, as well as the changes that occur as a more long-term effect of experimental treatment.

APPENDIX A

Tables*

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* Group designations conform in all cases to those in the diagram on page 8.

Table I

Summary of data gathered over the course of experimental treatment.

Time Gathered Groups	1 month prior to treatment	Following first meeting	Following second meeting	During meetings 2,5,8,11,14	Following last meeting	Following conclusion of meetings
A_1, B_1, C_1 (Counseling groups with less experienced counselor)	MMPI	F Scale Q Sort	Relationship Inventories Sociometric Test	Interview participation segments	F Scale Q Sort Relationship Inventories Sociometric Test	MMPI
A_2, B_2, C_2 (Counseling groups with more experienced Counselor)	MMPI	F Scale Q Sort	Relationship Inventories Sociometric Test	Interview participation segments	F Scale Q Sort Relationship Inventories Sociometric Test	MMPI
A_3, B_3, C_3 (Discussion groups)	MMPI	F Scale Q Sort	Relationship Inventories Sociometric Test		F Scale Q Sort Relationship Inventories Sociometric Test	MMPI
A_4, B_4, C_4 (Study Groups)	MMPI	F Scale Q Sort			F Scale Q Sort	MMPI

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Table II

Sociometric test Z scores for inter-scale comparison over each subject in each group: ratings given by each subject on others in his group.*

Scale	L - R		L - C		R - C	
Group	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
A_2	5.20	5.33	5.20	5.46	7.65	5.03
	5.79	6.44	5.60	6.44	6.44	7.65
	5.76	5.36	5.60	6.95	5.29	5.46
	4.80	7.65	4.97	4.46	4.40	4.46
	3.27	4.46	6.73	6.74	2.35	4.54
B_2	5.68	7.65	5.29	6.29	5.44	6.29
	6.47	5.32	6.07	6.47	5.85	5.26
	6.47	7.64	7.09	7.65	6.66	7.65
	4.15	5.52	6.74	6.74	4.51	5.31
	5.95	7.65	7.30	7.65	5.78	7.65
C_2	6.95	6.10	5.97	7.65	5.60	6.10
	6.42	4.03	5.60	5.60	5.20	5.10
	5.97	5.83	5.89	7.65	5.08	5.97
	5.60	6.95	6.95	5.31	5.39	5.46
	6.29	5.08	7.65	6.95	6.29	4.81
A_3	2.35	6.74	6.47	5.97	3.53	5.46
	6.47	5.46	5.21	7.65	5.46	5.46
	6.47	6.74	7.65	7.65	6.47	6.74
	7.65	7.65	5.97	5.11	5.97	5.11
	7.65	7.65	7.65	7.65	7.65	7.65
B_3	6.95	7.65	7.65	7.65	6.95	7.65
	7.65	5.79	7.65	6.66	7.65	5.59
	6.47	5.68	5.93	5.89	6.29	5.68
	6.07	5.35	6.74	6.59	5.79	5.15
	6.66	5.91	6.66	7.30	7.65	6.66
C_3	5.10	5.68	7.65	7.65	5.10	5.68
	5.79	6.10	4.84	4.69	5.37	5.31
	5.22	6.02	5.25	5.52	5.65	5.25
	5.74	6.74	6.59	6.02	5.89	5.68
	4.87	6.85	5.85	7.65	5.74	5.85

Legend:
L - Likeability scale
R - Respect scale
C - Comfort scale

*Data arithmetically converted to positive scores.

Table III

Sociometric test Z scores for inter-scale comparison over each subject in each group: ratings received by each subject from others in his group.*

	L - R		L - C		R - C	
	Pre	Post	Pre	Post	Pre	Post
A_2	5.93	5.66	5.33	5.66	5.66	7.65
	5.63	5.00	5.66	7.65	6.95	5.00
	5.00	5.00	5.00	5.00	2.35	7.65
	5.31	5.28	6.47	5.28	5.00	7.65
	6.13	5.00	5.68	5.00	4.98	7.65
B_2	6.42	4.29	7.09	5.50	6.19	3.78
	6.74	6.66	7.65	6.66	6.74	6.19
	5.89	4.60	6.19	6.74	6.95	4.62
	6.74	6.74	6.74	5.60	7.65	5.85
	6.22	5.45	6.02	6.47	5.41	5.71
C_2	7.65	5.00	6.05	5.13	6.05	5.00
	5.66	5.00	5.34	7.65	4.34	5.00
	6.26	5.31	6.53	7.65	5.89	5.31
	7.65	5.00	6.16	5.95	6.16	4.75
	5.00	6.95	5.00	5.59	5.00	4.61
A_3	6.10	5.79	5.20	6.38	4.58	5.50
	5.26	5.66	6.74	7.65	5.12	5.66
	4.91	6.74	6.33	5.34	5.44	5.16
	6.33	6.95	6.74	6.05	5.78	5.66
	6.33	6.95	7.65	6.26	6.33	5.83
B_3	5.85	5.50	6.83	3.81	5.97	4.03
	5.91	7.09	5.83	6.83	5.56	6.66
	4.84	6.47	6.47	6.02	4.77	5.89
	5.60	7.65	4.94	6.59	3.95	6.59
	5.02	7.65	5.81	4.80	4.66	4.80
C_3	4.40	4.37	5.74	5.76	4.91	4.54
	4.54	5.00	5.00	5.00	3.74	5.00
	5.85	4.91	5.85	4.53	6.13	4.81
	4.68	6.26	4.93	4.50	5.22	4.85
	5.87	5.19	5.95	6.05	5.29	5.47

Legend: L - Likeability scale
R - Respect scale
C - Comfort scale

* Data arithmetically converted to positive scores.

Table IV

Analysis of variance of sociometric test Z scores: ratings given by each subject to others in his group.

Source	SS	df	MS	F	p
Groups	11.67	2	5.84	2.24	-
Leaders	4.84	1	4.84		
G x L	7.57	2	3.79		
Error	62.59	24	2.61		
Trials	2.44	1	2.44	2.80	-
Scales	13.22	2	6.61	9.87	<.025
T x S	.61	2	.31		
Scales x G	.73	4	.18		
Scales x L	.23	2	.12		
S x G x L	13.43	4	3.36	5.01	<.05
Error	32.38	48	.67		
Trials x G	1.05	2	.53		
Trials x L	.78	1	.78		
T x G x L	6.31	2	3.16	3.63	
Error	20.87	24	.87		
T x S x G	.60	4	.15		
T x S x L	.28	2	.14		
Residual Error	28.21	52	.543		

Table V

Analysis of variance of sociometric test Z scores: ratings received by each subject from others in his group

Source	SS	df	MS	f	p
Groups	8.61	2	4.305	4.36	
Leaders	2.76	1	2.76		
G x L	6.29	2	3.145		
Error	23.69	24	.987		
Trials	.49	1	.49		
Scales	7.30	2	3.65	10.34	.01
T x S	.04	2	.04		
Scales x G	.62	4	.16		
Scales x L	1.23	2	.62		
S x G x L	9.18	4	2.30	6.51	<.05
Error	16.93	48	.353		
Trials x G	3.06	2	1.53		
Trials x L	1.48	1	1.48		
T x G x L	7.51	2	3.76		
Error	30.16	24	1.26		
T x S x G	7.16	4	1.79		
T x S x L	7.07	2	3.535	5.67	<.10
Residual Error	32.42	52	.623		

Table VI

Means for sociometric scale correlation analyses

	Ratings by each of others			Each as rated by others		
	L-R	L-C	R-C	L-R	L-C	R-C
A_2	5.41	5.81	5.32	5.39	5.67	6.05
B_2	6.25	6.73	6.04	5.97	6.47	5.91
C_2	5.92	6.52	5.50	5.95	6.11	5.21
A_3	6.48	6.70	5.95	6.10	6.43	5.51
B_3	6.42	6.87	6.50	6.16	5.79	5.29
C_3	5.81	6.17	5.55	5.11	5.33	5.00

Legend: L - Liking
R - Respect
C - Comfort

a) Scale pair means for each group.

	Ratings by each of others		Each as rated by others	
	Pre	Post	Pre	Post
A_2	5.27	5.76	5.41	6.01
B_2	5.96	6.72	6.58	5.66
C_2	6.06	5.83	5.92	5.90
A_3	6.17	6.58	5.39	6.11
B_3	6.85	6.35	5.47	6.03
C_3	5.64	6.07	5.21	5.09

b) Group means over all scale pairs, pre- and post-treatment testing.

Table VII

Analysis of variance of sociometric test inter-group agreement

Source	SS	df	MS	f	p
Groups	45.02	2	22.51	7.81	<.05
Leaders	8.34	1	8.34	2.89	
G x L	.92	2	.46		
Error	69.12	27	2.88		
Trials	.01	1	.01		
Scales	1.71	2	.86		
T x S	.04	2	.04		
Scales x G	3.39	4	.85		
Scales x L	1.31	2	.66		
S x G x L	.62	4	.16		
Error	40.00	54	.74		
Trials x G	9.43	2	4.72	7.73	<.05
Trials x L	.01	1	.01		
T x G x L	11.15	2	5.58		
Residual Error	14.85	27	.61		

Table VIII

Means for sociometric test analysis of group agreement (variance).

	Pre	Post
A_2	1.41	1.08
B_2	1.87	2.34
C_2	1.16	1.10
A_3	1.61	1.57
B_3	2.30	3.13
C_3	1.73	1.06

Table IX

Analysis of variance for scale R (positive regard) of the Relationship Inventory.

Source	SS	df	MS	F	p
Experimental Treatment	161.16	2	80.58		
Groups	1704.29	2	852.14		
ET x G	3617.96	4	904.49		
Error	17935.80	36	498.22		
Trials	250.37	1	250.37		
Classes	22788.2	2	11394.13	49.89	.005
T x C	441.81	2	220.90		
T x G	58.54	2	29.27		
T x ET	344.65	2	172.33		
T x ET x G	361.57	4	90.39		
C x G	1761.78	4	440.44	1.93	
C x ET	2097.11	4	524.28	2.29	.10
C x ET x G	2978.44	8	372.31		
C x T x G	342.95	4	85.74		
C x T x ET	123.70	4	30.93		
ET x G x C x T	463.81	8	57.98		
Residual Error	41109.00	180	228.38		

Table X

Analysis of variance for Scale E (Empathy) of the Relationship Inventory

Source	SS	df	MS	F	p
Experimental Treatment	327.50	2	163.75		
Groups	2729.119	2	1364.56	3.99	<.05
ET x G	2218.62	4	554.65		
Error	12324.27	36	342.34		
Trials	3.11	1	3.11		
Classes	18573.90	2	9286.95	86.1	<.005
T x C	571.85	2	285.93	2.6	<.10
T x G	128.45	2	64.23		
T x ET	121.72	2	60.86		
T x G x ET	384.75	4	96.19		
C x G	214.82	4	53.70		
C x ET	1391.17	4	347.79	3.2	<.025
C x G x ET	2116.99	8	264.62	2.4	<.025
T x C x G	176.15	4	44.04		
T x C x ET	175.22	4	43.80		
T x C x G x ET	168.45	8	21.06		
Residual Error	19406.93	180	107.82		

Table XI

Analysis of variance for Scale C (Congruance) of the Relationship Inventory

Source	SS	df	MS	F	p
Experimental Treatment	2239.32	2	1119.66	3.4	<.10
Groups	2893.03	2	1446.51	4.4	<.05
ET x G	1046.37	4	261.59		
Error	11944.67	36	331.80		
Trials	98.40	1	98.40		
Classes	16377.65	2	8188.83	55.8	<.005
T x C	438.05	2	219.03		
T x G	397.96	2	198.98		
T x ET	32.39	2	16.19		
T x G x ET	1151.22	2	287.80	1.98	<.10
C x G	1180.50	4	295.13	2.0	<.10
C x ET	1447.88	4	361.97	2.5	<.10
C x G x ET	1778.96	8	222.37		
T x C x G	296.28	4	74.07		
T x C x ET	274.33	4	68.58		
T x C x G x ET	279.27	8	34.91		
Residual Error	26102.93	180	145.02		

Table XII

Analysis of variance for Scale U (Unconditionality) of the Relationship Inventory

Source	SS	df	MS	F	p
Experimental Treatment	551.65	2	275.83		
Groups	1625.10	2	812.55	2.3	
ET x G	2125.79	4	531.45		
Error	12940.33	36	359.45		
Trials	22.53	1	22.53		
Classes	4985.39	2	2492.69	25.1	
T x C	54.42	2	27.21		
T x G	405.96	2	203.00	2.0	<.10
T x ET	177.49	2	88.74		
T x G x ET	213.16	4	53.29		
C x G	1073.93	4	268.48	2.68	<.10
C x ET	651.17	4	162.79		
C x G x ET	126.92	8	15.86		
T x C x G	126.62	4	31.66		
T x C x ET	145.69	4	36.42		
T x C x G x ET	170.93	8	21.37		
Residual Error	17892.47	180	99.40		

Table XIII

Scale and Class means for the Relationship Inventory

Scale	Class	Pre	Post	Difference
R	Most	48.49	49.69	+ 1.20
	Least	32.69	27.62	- 5.07
	Leader	51.11	49.20	- 1.91
E	Most	39.38	42.87	+ 3.49
	Least	25.09	21.47	- 3.62
	Leader	40.87	40.36	- .51
C	Most	50.24	51.93	+ 1.69
	Least	35.71	31.20	- 4.51
	Leader	48.98	48.18	- .80
U	Most	33.09	33.78	+ .69
	Least	29.04	27.76	- 1.28
	Leader	39.49	38.36	- 1.03

Table XIV

Analysis of variance for Relationship Inventory change scores* (class means).

Source	SS	df	MS	F	p
Total	72.02	11			
Between Classes	59.10	2	29.55	20.5	.005
Within Classes	12.92	9	1.44		

* Converted to positive scores

Table XV

Correlation between F Scale scores and Course grades received.

Course Grades	Pre	Post	Change
6 weeks	- .373*	- .405*	- .145
12 weeks	- .391*	- .386*	.055
Final Exam	- .344*	- .390*	- .122

*Significant at the .01 level of conficence.

Table XVI

Analysis of variance of F Scale data.

Source	df	SS	MS	F	p
Groups	2	6196.9	3098.5	2.86	.10
Leaders	3	538.4			
G x L	6	444.7			
Error	48	51989.4	1083.1		
Trials	1	42.0			
T x G	2	28.9			
T x L	3	595.5	198.5	2.73	.10
T x G x L	6	630.1			
Error	48	3489.0	72.69		

Table XVII

Analysis of variance of MMPI data over all scales.

Source	SS	df	MS	F	p
Experimental Treatment	372.38	3	124.13		
Groups	1650.45	2	825.23		
ET x G	1100.63	6	183.44		
Error	26827.14	48	558.90		
Scales	7156.03	9	795.11	20.12	<.005
Trials	65.33	1	65.33	1.66	
S x T	206.80	9	22.98		
S x ET	3152.79	27	116.77		
S x G	1714.57	18	95.25		
S x ET x G	5980.55	54	110.75		
Error	58155.06	432	134.62		
T x ET	99.90	3	33.30		
T x G	36.67	2	18.34		
T x ET x G	1789.84	6	298.31	2.55	<.05
Error	5608.06	48	116.83		
S x T x ET	2318.10	27	85.86	2.17	<.005
S x T x G	2139.75	18	118.87	3.24	<.005
S x T x G x ET	3995.82	54	74.00	1.87	<.005
Residual Error	17067.74	432	39.51		

Table XVIII

Analysis of variance of MMPI scale D

Source	SS	df	MS	F	p
Experimental Treatment	916.17	3	305.39	2.13	--
Groups	375.27	2	187.63		
ET x G	718.93	6	119.82		
Error	6878.80	48	143.31		
Trials	50.70	1	50.70		
T x ET	1291.77	3	430.59	6.83	$<.005$
T x G	1453.4	2	726.70	11.51	$<.005$
T x ET x G	2127.73	6	354.62	5.62	$<.005$
Error	3028.4	48	63.09		

Table XIX

Analysis of variance of Q-Sort r. scores

Source	SS	df	MS	F	p
Experimental Treatment	1043.69	3	347.90		
Groups	4969.12	2	2484.56	2.11	
G x L	3452.08	6	575.35		
Error	56604.40	48	1179.26		
Trials	35123.41	1	35123.41	168.4	$<.005$
T x ET	2457.16	3	819.05	3.93	$<.05$
T x G	1204.12	2	602.06		
T x ET x G	1279.62	6	213.27		
Error	10009.20	48	208.52		

Table XX

Analysis of variance of 12-weeks and final exam grades, converted to Z scores.

Source	SS	df	MS	F	p
Experimental Treatment	1364.2	3	454.8		
Groups	102112.7	2	51056.4	9.37	<.005
ET x G	8996.8	6	1499.5		
Error	261453.0	48	5446.9		
Trials	364.1	1	364.1		
T x ET	6983.4	3	2327.5		
T x G	8740.9	2	4370.5	2.19	
T x ET x G	4237.1	6	706.2		
Residual Error	95811.0	48	1996.1		

Table XXI

Pearson Product-Moment Correlations: Rater 1 and Rater 2 on EXP

Data Point	1/2	2/2
1	.675	.629
2	.418	.511
3	.473	.521
4	.387	.529
5	.675	.629
Overall	.469	.530

Table XXII

Pearson Product-Moment Correlations: Rater 1 and Rater 2 on PES

Data Point	1/2	2/2
1	.700	.691
2	.585	.508
3	.647	.491
4	.463	.487
5	.700	.691
Overall	.577	.514

Table XXIII

Pearson Product-Moment Correlations: Rater 1 and Rater 2 on PC

Data Point	1/2	2/2
1	.485	.557
2	.160	.559
3	.276	.457
4	.474	.496
5	.485	.557
Overall	.427	.467

Table XXIV

High achieving counseling groups (C_1 and C_2) EXP

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.48	1.58	1.05 8 df n.s.
More Experienced Counselor	1.72	2.16	.56 8 df n.s.
t	.07 8 df n.s.	2.23 8 df .05	

Table XXV

Low achieving counseling groups (A_1 and A_2) EXP Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.78	2.16	.39 8 df n.s.
More Experienced Counselor	1.54	2.00	2.06 8 df .05
t	1.04 8 df n.s.	.51 8 df n.s.	

Table XXVI

Mixed achieving counseling groups (B_1 and B_2) EXP

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.76	1.6	.47 8 df n.s.
More Experienced Counselor	1.58	2.4	2.96 8 df .01
t	.06 8 df n.s.	2.35 8 df .025	

Table XXVII

High achieving counseling groups (C_1 and C_2)
PES Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.68	1.28	.52 8 df n.s.
More Experienced Counselor	2.58	3.00	.91 8 df n.s.
t	2.62 8 df p.025	4.67 8 df p.005	

Table XXVIII

Low achieving counseling groups (A_1 and A_2)
PES Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	2.22	2.46	.64 8 df n.s.
More Experienced Counselor	2.16	2.78	.98 8 df. n.s.
t	.15 8 df n.s.	.49 8 df n.s.	

Table XXIX

Mixed achieving counseling groups (B_1 and B_2) PES Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	2.0	1.06	2.20 8 df .05
More Experienced Counselor	1.98	3.60	2.63 8 df .025
t	.04 8 df n.s.	4.21 8 df .005	

Table XXX

High Achievement Counseling Group (C_1 and C_2) PC Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.54	1.22	.32 8 df n.s.
More Experienced Counselor	2.32	3.28	1.58 8 df .10
t	1.61 8 df .10	4.29 8 df .005	

Table XXXI

Low achieving counseling groups (A_1 and A_2)
PC Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.70	2.74	1.81 8 df .10
More Experienced Counselor	1.80	1.98	.28 8 df n.s.
t	.02 8 df n.s.	3.22 8 df .10	

Table XXXII

Mixed achieving counseling groups (B_1 and B_2)
PC Scale

	First Data Pt.	Last Data Pt.	t
Less Experienced Counselor	1.8	1.18	1.16 8 df n.s.
More Experienced Counselor	1.50	2.90	3.08 8 df .01
t	.05 8 df n.s.	4.60 8 df .005	

Table XXXIII

Repeated measures analysis of variance of process scores (EXP, PES, PC)

	Source	SS	df	MS	ET	F	p
1.	Intervals	6666.250	4	1666.562	(27)	3.19	.05
2.	Leaders	1035.125	1	1035.125	(34)	3.57	.10
3.	Groups	38.028	2	19.013	(7)	.02	n.s.
4.	Halves	1309.014	1	1309.013	(41)	.82	.10
5.	Scales	3768.861	2	1884.430	(42)	18.44	.01
6.	Raters	33.347	1	33.347	(43)	.22	n.s.
7.	SS/Gps	10247.667	12	853.972	--	--	--
8.	I × L	2513.972	4	628.493	(47)	1.82	n.s.
9.	I × G	13626.417	8	1703.302	(27)	3.26	.01
10.	I × H	3339.528	4	834.881	(53)	2.52	.10
11.	I × S_c	1379.333	8	172.416	(54)	3.06	.01
12.	I × R	1701.028	4	425.256	(55)	4.64	.005
13.	L × G	799.750	2	399.875	(34)	1.38	n.s.
14.	L × H	120.125	1	120.125	(59)	1.11	n.s.
15.	L × S_c	375.083	2	187.541	(60)	5.07	.025
16.	L × R	23.347	1	23.347	(61)	.36	n.s.
17.	G × H	625.028	2	312.513	(41)	.91	n.s.
18.	G × S_c	261.472	4	65.368	(42)	.64	n.s.
19.	G × R	139.194	2	69.597	(43)	.46	n.s.
20.	H × S_c	230.528	2	115.263	(64)	1.87	n.s.
21.	H × R	51.681	1	51.680	(65)	.51	n.s.
22.	S_c × R	7154.361	2	3577.180	(66)	81.90	.005
23.	I × L × G	4408.028	8	551.003	(47)	1.59	n.s.
24.	I × L × H	3369.806	4	842.451	(67)	12.72	.005

25.	I × L × S_c	384.778	8	48.097	(67)	.72	n.s.
26.	I × L × R	339.639	4	84.909	(67)	1.28	n.s.
27.	I × SS/G	25080.667	48	522.513	--	--	--
28.	I × G × H	1322.472	8	165.309	(53)	.49	n.s.
29.	I × G × S_c	3507.000	16	219.187	(54)	3.89	.01
30.	I × G × R	1785.806	8	223.225	(55)	2.43	.05
31.	I × H × S_c	724.056	8	90.506	(67)	1.36	n.s.
32.	I × H × R	526.306	4	131.576	(67)	1.98	.10
33.	I × S_c × R	474.389	8	59.298	(67)	.89	n.s.
34.	L × SS/G	3479.500	12	289.958	--	--	--
35.	L × G × H	1966.750	2	983.375	(59)	9.11	.005
36.	L × G × S_c	125.917	4	31.479	(60)	.85	n.s.
37.	L × G × R	16.361	2	8.180	(67)	.01	n.s.
38.	L × H × S_c	5.083	2	2.541	(67)	.03	n.s.
39.	L × H × R	.014	1	.013	(67)	.00	n.s.
40.	L × S_c × R	12.028	2	6.013	(67)	.09	n.s.
41.	SS/G × H	4111.167	12	342.597	--	--	--
42.	SS/G × S_c	2452.583	24	102.190	--	--	--
43.	SS/G × R	1788.500	12	149.041	--	--	--
44.	G × H × S_c	452.806	4	113.201	(64)	1.83	n.s.
45.	G × S_c × R	121.972	4	30.493	(66)	.69	n.s.
46.	H × S_c × R	20.361	2	10.180	(67)	.15	n.s.
47.	I × L × SS/G	16552.167	48	344.836	--	--	--
48.	I × L × G × H	4310.194	8	538.774	(67)	8.13	.005
49.	I × L × G × S_c	771.722	16	48.232	(67)	.72	n.s.
50.	I × L × G × R	1057.528	8	132.190	(67)	1.99	.10
51.	I × L × H × S_c	955.611	8	119.451	(67)	1.80	.10
52.	I × L × S_c × R	592.278	8	74.034	(67)	1.11	n.s.
53.	I × SS/G × H	15873.000	48	330.687	--	--	--

54.	I × SS/G × S_c	5407.833	96	56.331	--	--	--
55.	I × SS/G × R	4403.167	48	91.732	--	--	--
56.	I × G × H × S_c	1248.444	16	78.027	(67)	1.17	n.s.
57.	I × G × S_c × R	1551.778	16	96.986	(67)	1.46	n.s.
58.	I × H × S_c × R	233.111	8	29.138	(67)	.44	n.s.
59.	L × SS/G × H	1295.000	12	107.916	--	--	--
60.	L × SS/G × S_c	887.750	24	36.989	--	--	--
61.	L × SS/G × R	786.333	12	65.527	--	--	--
62.	L × G × H × S_c	179.917	4	44.979	(67)	.67	n.s.
63.	L × G × S_c × R	460.639	4	115.159	(67)	1.73	n.s.
64.	SS/G × H × S_c	1479.583	24	61.649	--	--	--
65.	SS/G × H × R	1393.528	14	99.537	--	--	--
66.	SS/G × S_c × R	1048.250	24	43.677	--	--	--
67.	Residual	71255.028	1076	66.222	--	--	--

Table XXXIV

Group means over data points.

Data Point	A	B	C
1.	18.37	18.12	21.54
2.	19.20	14.41	17.04
3.	15.95	22.54	14.08
4.	26.04	18.58	19.58
5.	17.66	23.58	23.45

Table XXXV

Scale means over data points.

d.p.	PC	EXP	PES
1.	19.333	17.958	20.750
2.	16.292	16.750	17.625
3.	16.958	16.708	18.917
4.	21.000	18.625	24.583
5.	22.083	18.417	24.208

Table XXXVI

Means for raters 1 and 2 over data points

Data Points	$Rater_1$	$Rater_2$
1	18.77	19.91
2	15.63	18.13
3	17.63	17.41
4	22.77	20.02
5	22.58	20.55

Table XXXVII

Means for leaders by scales.

	PC	EXP	PES
Less Experienced Counselor	18.167	17.567	20.033
More Experienced Counselor	20.100	17.817	22.400

Table XXXVIII

Means for rater 1 and rater 2 for each scale

PC		EXP		PES	
1	2	1	2	1	2
18.28	19.98	16.03	19.35	24.13	18.30

Table XXXIX

Means for Intervals by Groups x Scales

D.P.	A			B			C		
	PC	EXP	PES	PC	EXP	PES	PC	EXP	PES
1.	18.00	18.12	19.00	17.87	17.50	19.00	22.12	18.25	24.24
2.	18.00	17.50	22.12	13.62	16.00	13.62	17.25	16.75	17.12
3.	15.37	16.00	16.50	22.25	19.87	25.50	13.25	14.25	14.75
4.	27.50	20.25	30.37	17.12	17.37	20.75	18.37	17.75	22.62
5.	14.12	17.12	21.75	26.00	18.37	26.37	26.12	19.75	24.50

Table XL

Means of Rater 1 and Rater 2 for Groups overall Data Points

	A		B		C	
	R_1	R_2	R_1	R_2	R_1	R_2
1.	17.50	19.25	16.33	19.91	22.50	20.53
2.	17.97	20.50	12.91	15.91	16.08	18.00
3.	15.50	16.41	24.75	20.33	12.66	15.50
4.	28.25	23.83	20.91	16.25	19.16	20.00
5.	18.50	16.83	24.83	22.33	24.41	22.50

APPENDIX B

Instruments

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ATTITUDE SCALE

[illegible]

The following are statements with which some people would agree and others would disagree. Please mark each statement in the left margin, according to the amount of your agreement or disagreement by using the following scale:

+ 1	slight agreement	- 1	slight disagreement
+ 2	moderate agreement	- 2	moderate disagreement
+ 3	strong agreement	- 3	strong disagreement

____ 1. Obedience and respect for authority are the most important virtues children should learn.

____ 2. No weakness or difficulty can hold us back if we have enough will-power.

____ 3. When I'm in a group, I'm always afraid I may say or do something foolish.

____ 4. Science has its place, but there are many important things that can never possibly be understood by the human mind.

____ 5. Human nature being what it is, there will always be war and conflict.

____ 6. I wish people would be more honest with you.

____ 7. Every person should have complete faith in some supernatural power whose decisions he obeys without question.

____ 8. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.

____ 9. I'm not the person I pretend to be.

____ 10. A person who has bad manners, habits and breeding can hardly expect to get along with decent people.

____ 11. What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

____ 12. If you once start doing favors for people, they may just walk all over you.

____ 13. Some people are born with an urge to jump from high places.

+ 1 slight agreement — - 1 slight disagreement
+ 2 moderate agreement — - 2 moderate disagreement
+ 3 strong agreement — - 3 strong disagreement

____ 14. Nowadays, when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catch- an infection or disease from them.

____ 15. I often seem to be apologizing for myself.

____ 16. An insult to our honor should always be punished.

____ 17. Young people sometimes get rebellious ideas, but as they grow up, they ought to get over them and settle down.

____ 18. People are basically dissatisfied, always hunting for something new.

____ 19. It was best to use some pre-war authorities in Germany to keep order and prevent chaos.

____ 20. What this country needs most--more than laws and political programs--is a few courageous, tireless, devoted leaders in whom the people can put their faith.

____ 21. I tend to do or say things I'm later sorry for.

____ 22. Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped--or worse.

____ 23. People can be divided into two distinct classes: the weak and the strong.

____ 24. Once you get to know most people well enough, you usually like them.

____ 25. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.

____ 26. Someday it will probably be shown that astrology can explain a lot of things.

____ 27. I respect myself.

____ 28. Nowadays more and more people are prying into matters that should remain personal and private.

____ 29. Wars and social troubles may some day be ended by an earthquake or flood that will destroy the whole world.

+ 1	slight agreement	- 1	slight disagreement
+ 2	moderate agreement	- 2	moderage disagreement
+ 3	strong agreement	- 3	strong disagreement

____ 30. Most people these days have pretty low moral standards,

____ 31. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feebleminded people.

____ 32. The wild sex life of the old Greeks and Romans was tame, compared to some of the goings-on in this country, even in places where people might least expect it.

____ 33. I often get a "helpless" feeling.

____ 34. If people would talk less and work more, everybody would be better off.

____ 35. Most people don't realize how much our lives are controlled by plots hatched in secret places.

____ 36. All people can talk about these days, it seems, is Hollywood, TV, and foolishness like that.

____ 37. Homosexuals are hardly better than criminals, and ought to be severely punished.

____ 38. I'm pretty satisfied with the way I am.

____ 39. The business man and the manufacturer are much more important to society than the artist and the professor.

____ 40. People get ahead by using "pull", and not because of what they actually know.

____ 41. No sane, normal, decent person could ever think of hurting a close friend or relative.

____ 42. I'm often not sure I'm doing the right thing.

____ 43. Familiarity breeds contempt.

____ 44. Nearly everybody tries to be nice.

____ 45. Nobody ever learned anything really important except through suffering.

____ 46. Just little things bother me.

____ 47. The true American way of life is disappearing so fast that force may be necessary to preserve it.

____ 48. The average person is not very well satisfied with himself.

+ 1 slight agreement - 1 slight disagreement
+ 2 moderate agreement - 2 moderate disagreement
+ 3 strong agreement - 3 strong disagreement

____ 49. I feel pretty sure of myself in most situations.

____ 50. Most people are pretty smug about themselves, never really facing their bad points.

Q-Sort of Self-Referent Items

These items are presented on individual cards and sorted into 9 piles from those items least characteristic of the self to those most characteristic. The number in each pile is 3, 6, 9, 13, 18, 13, 9, 6, 3.

1. I express my emotions freely.
2. Most of my troubles are not my own fault.
3. I feel happy much of the time.
4. I feel secure within myself.
5. It's quite important for me to know how I seem to others.
6. I put on a false front.
7. I often feel that I want to give up trying to cope with the world.
8. I have confidence in myself.
9. I am kept going by hopes for the future.
10. I have courage--the willingness to keep trying.
11. I usually like people.
12. I am a strong, competent person.
13. I am full of life and good spirits.
14. I feel free and unhampered.
15. I can stand up for my rights if I need to.
16. My decisions are not my own. I feel controlled by others.
17. I am liked by most people who know me.
18. I am ashamed of myself.
19. I have some originality or inventiveness in me.
20. I don't remake myself to satisfy each person who is important to me.
21. I have initiative. I can get started on my own.
22. It takes everything I've got just to keep going.
23. If I can't have perfection, I don't want anything. Nothing in between will satisfy me.
24. I am shy.
25. Basically I like myself.
26. I am no one. I am not a person in my own right.
27. I am fearful, often dreading what may happen.
28. My energies and abilities are fully available to me.
29. I am intelligent.
30. I have a feeling I'm just not facing things.
31. I am different from others.
32. I forgive easily--don't hold grudges or try to "get even."
33. I tend to feel envy at other people's good fortune.
34. I am afraid of sex.
35. I have to protect myself with excuses, with rationalizing.
36. I am satisfied with myself.
37. I am sexually attractive.
38. I am worth being loved.
39. I shrink from facing a crisis or a real hard test of myself.
40. I understand myself.
41. I have a feeling of hopelessness.
42. I often feel resentful.
43. I feel helpless.

44. I am disorganized.
45. I am too much the result of past experiences to hope for much change.
46. I feel inferior.
47. I am a failure.
48. I am emotionally mature.
49. I am confused.
50. I am optimistic.
51. I am pretty sociable, and really enjoy being with people.
52. I get pleasure out of life.
53. I am critical of people.
54. I am superior to most other people.
55. I get upset when old and familiar things are changed.
56. I'm a pretty calm and relaxed person. Few things really bother me.
57. I feel that sex is a source of pleasure, without shame.
58. I generally am fortunate.
59. I am really self-centered--don't care much about other people.
60. It is pretty hard to really be myself.
61. I am usually an aloof, reserved person.
62. I do care for others and want them to be happy.
63. I am an angry, hostile person.
64. I live largely by other people's values and standards.
65. I really am disturbed--close to the breaking point.
66. I often feel guilty.
67. I trust my emotions.
68. I am kind and gentle.
69. I have warm emotional relationships with others.
70. I just have to drive myself to get things done.
71. I am a submissive person.
72. I feel able to make up my own mind and stick to it if I want to.
73. I am worthless.
74. I am adaptable. A strange situation is not a crisis to me.
75. I just wish I could be someone else, and forget all about me.
76. I just can't tell anyone my real feelings.
77. I feel adequate.
78. I am a pretty stable person.
79 I can give my love to another.
80. I am conscientious and honorable--can be depended upon.

RELATIONSHIP INVENTORY

Below are listed a variety of ways that one person may feel or behave in relation to another person.

Please consider each statement carefully with reference to your present relationship with ______________________________.

Mark each statement in the left margin, according to how strongly you feel that it is true, or not true, in this relationship. Please mark every one. Write in plus (+) or minus (-) marks to stand for the following answers:

+++	Yes, I strongly feel that it is true.
++	Yes, I feel it is true.
+	Yes, I feel that it is probably true, or more true than untrue.
-	No, I feel that it is probably untrue, or more untrue than true.
--	No, I feel it is not true.
---	No, I strongly feel that it is not true.

_____ 1. He respects me.

_____ 2. He tries to understand just how I see things.

_____ 3. His interest in me depends on what I am talking to him about.

_____ 4. He tells me things he does not mean.

_____ 5. He disapproves of me.

_____ 6. He understands my words but does not realize how I feel.

_____ 7. Sometimes he responds to me in a more positive and friendly way than he does at other times.

_____ 8. What he says to me never conflicts with what he thinks or feels.

_____ 9. He is curious about "the way I tick," but not really interested in me as a person.

_____ 10. He is interested in knowing what my experiences mean to me.

_____ 11. His feeling toward me does not depend on how I am feeling towards him.

_____ 12. He is disturbed whenever I talk about or ask about certain things.

_____ 13. He likes seeing me.

_____ 14. He nearly always knows exactly what I mean.

_____ 15. His attitude toward me depends partly on how I am feeling about myself.

_____ 16. I feel that he has unspoken feelings that are causing difficulty in our relationship.

_____ 17. He is indifferent to me.

_____ 18. At times he jumps to the conclusion that I feel more strongly or more concerned about something than I actually do.

_____ 19. He responds to me consistently; always warmly or always coldly.

_____ 20. He behaves just the way that he is, in our relationship.

_____ 21. He appreciates me.

_____ 22. Sometimes he thinks that I feel a certain way, because he feels that way.

_____ 23. He likes me in some ways, dislikes me in others.

_____ 24. At times he is not aware of something that I can sense in his response to me.

_____ 25. He is friendly and warm towards me.

_____ 26. He understands me.

_____ 27. If I am annoyed with him he becomes annoyed with me.

_____ 28. He pretends that he likes me or understands me more than he really does.

_____ 29. He cares about me.

_____ 30. His own attitudes toward some of the things I say, or do, stop him from really understanding me.

_____ 31. Whether I am expressing "good" feelings or "bad" ones seems to make no difference to the way he feels toward me.

_____ 32. He does not avoid anything that is important for our relationship.

_____ 33. He feels that I am dull and uninteresting.

_____ 34. He ignores some of my feelings.

_____ 35. Sometimes he is warmly responsive to me, at other times cold or disapproving.

_____ 36. I feel that I can trust him to be honest with me.

_____ 37. He is interested in me.

_____ 38. He appreciates exactly what my experiences feel like to *me*.

_____ 39. Depending on his mood, he sometimes responds to me with quite a lot more warmth and interest than he does at other times.

_____ 40. He is secure and comfortable in our relationship.

_____ 41. He just tolerates me.

_____ 42. He tells me what my actions and feelings mean.

_____ 43. His liking or disliking of me is not affected by anything that I tell him about myself.

_____ 44. He is acting a part with me.

_____ 45. He does not really care what happens to me.

_____ 46. He does not realize how strongly I feel about some of the things we discuss.

_____ 47. His general feeling toward me varies considerably.

_____ 48. There are times when I feel that his outward response to me is quite different from the way he feels underneath.

_____ 49. I feel that he really values me.

_____ 50. He responds to me mechanically.

_____ 51. Whether I like or dislike myself makes no difference to the way he feels about me.

_____ 52. I don't think that he is being honest with himself about the way he feels about me.

_____ 53. He dislikes me.

_____ 54. He applies his own point of view to me.

_____ 55. Sometimes he responds quite positively to me, and at other times he seems indifferent.

_____ 56. I feel that he is being genuine with me.

_____ 57. He is impatient with me.

_____ 58. He generally senses or realizes how I am feeling.

_____ 59. He likes me better when I behave in some ways than he does when I behave in other ways.

_____ 60. Sometimes he is not at all comfortable, but we go on, outwardly ignoring it.

_____ 61. He feels deep affection for me.

_____ 62. He usually understands all of what I say to him.

_____ 63. Whether I feel fine or feel awful makes no difference to the warmth or coldness of his response to me.

_____ 64. He does not try to mislead me about his own thoughts or feelings.

_____ 65. He regards me as a disagreeable person.

_____ 66. He can be deeply and fully aware of my most painful feelings without being distressed or burdened by them himself.

_____ 67. I can be very critical of him or very appreciative of him without it changing his feeling toward me.

_____ 68. What he says gives a false impression of his total reaction to me.

_____ 69. At times he feels contempt for me.

_____ 70. When I do not say what I mean at all clearly he still understands me.

_____ 71. His general feeling toward me (for example, of liking, respect, distrust or anger) reflects the way that I am feeling toward him.

_____ 72. He tries to avoid telling me anything that might upset me.

73. How important to you is the relationship with this person, at present, compared with your other personal relationships? (check one)

_____a. It means more to me than my relationship with anyone else.
_____b. It is just as important to me as any other relationship I have.
_____c. There are some other relationships that are more important to me.
_____d. Compared with other relationships I have, it is not important to me.

74. **In general, how satisfied do you feel with the relationship that you now have with this person? (check one)**

____ I feel completely satisfied with it.
____ I am satisfied.
____ I am fairly satisfied.
____ I am about half satisfied, half dissatisfied.
____ I am rather dissatisfied.
____ I am quite dissatisfied.
____ I am extremely dissatisfied.

INFORMAL DISCUSSION GROUP

1. Rank the other members of your group according to their likeability: Rank the most likable person as "1", the least "5", etc. When you have finished, indicate where you think you fit in - between #1 and #2, between #4 and #5, etc.

   Sample: John - 1
   Bob - 2
   Mary - 3 Myself, between 2 and 3(Mary and Bob)
   Chuck - 4
   Alice - 5

2. Now make the same kind of ranking on the basis of respect - who is the most worthy of respect in your group? Don't forget to rank yourself when you finish ranking the others.
3. Rank the other members of your group in terms of easiness to be with - who is the most comfortable person to be around? Don't forget to rank yourself.
4. Who do you feel likes you the most? the least?
5. Who respects you the most? the least?
6. Who finds you easiest to be with? least easy to be with?

BE SURE TO WRITE YOUR NAME ON YOUR PAPER!!!

Experiencing Scale

Dr. Eugene Gendlin

Outline of EXP Scale

Stage 1 AN: No "personally private" nor "personality relevant" communication:

At Stage 1 the individual either tells nothing about himself or his private life, or he tells only what one might tell people to a potentially unfriendly stranger. He also does not offer information with the intention of describing the sort of personality he has or had.

Stage 2 AY: and BN: There is "personally private" or "personality relevant" communication with no "self-involvement" in process of communication:

The Stage 2 individual reports personal facts in the manner of an observer who is not involved in these facts. He is not self-involved because he doesn't inject his feelings into his discussion. He may give his family history, talk about his environment, or explain what kind of person he is or was but his way of doing so is "externalized," "intellectualized," or "mechanical," or "reciting."

Stage 3 BY: and CN: There is "self-involvement" on process of communication with no connected examination focused on self:

Stage 3 individual communicates with "unexamined self-involvement" because he narrates with his feeling without noticing the significance of his feeling. He is immersed in feeling with no examining focus on himself. He does not look for the meanings of his feelings and his focus is on the circumstances which aroused his feelings. (The individual who interrupts his narration to look at, explain or explore feelings but not with Stage 4 connected "self-examination" is rated 3.5.)

Stage 4 CY: and DN: There is connected examination focused on self with no sense of or for "immediately felt inner events."

The Stage 4 individual is following a "connected" chain of thoughts to look inside himself and to examine into his feelings and think about what they mean about himself. There are no "immediately felt inner events" interrupting his chain of discussion. (The individual who speaks from much present emotion or speaks about hitherto-hidden aspects of himself with new insight but not with Stage 5 sense for immediately felt inner events or Stage 5 subjective definitions is rated at 4.5.)

Stage 5 DY: and EN: There is a sense of "immediately felt inner events" with no steady hold of "specific" "felt referents."

The Stage 5 individual notices the presence or absence of new immediate feelings but has to struggle to find or hold onto them. He finds ordinary vocabulary inadequate to describe these new events, and therefore he uses "subjectively-defined language" in his communications. Felt data is not firm. (The individual who does not explore with direct reference to a specific new inner event but who uses subjective language with reference to a global sense of a new self is rated 5.5.)

Stage 6 EY: and FN: There is a steady hold of specific "felt referents" with no free movement in continuing stream or felt referents.

The Stage 6 individual is actively engaged in discovering new facets of a specifically felt datum. He is using this datum as a "felt referent" by holding onto it while he is studying it. He explores the felt datum for new meanings and directs his exploration inward by a steady reference to a specific feeling. (The individual who discusses one after another "felt referent" but separately without using each as a guidepost for a smooth progression from one referent to another is rated 6.5.)

Stage 7 FY: There is free movement in a continuing stream of felt referents.

The Stage 7 individual easily clarifies his own feelings and meanings, by direct access to a continuous flow of inner events. He uses his "felt referents" as sure guideposts with reliance on his own free movement within his whole subjective field.

Dichotomous Criteria Scale for Experiencing

AN: No personally private no personality relevant communication.
AY: There is personally private or personality relevant communication.

BN: No self-involvement in process of communication.
BY: There is self-involvement in process of communication.

CN: No connected examination focused on self.
CY: There is connected examination focused on self.

DN: No sense of or for immediately felt inner events.
DY: There is a sense of or for immediately felt inner events.

EN: No steady hold or specific felt referent.
EY: There is a steady hold of specific felt referent.

FN: No free movement in continuing stream of felt referents.
FY: There is free movement in continuing stream of felt referents.

If:	Score:	Then if:	Raise Score to:
AN	1	Section II cues apply:	1.5
AY and BN	2	" " " "	2.5
BY and CN	3	" " " "	3.5
CY and DN	4	" " " "	4.5
DY and EN	5	" " " "	5.5
EY and FN	6	" " " "	6.5
FY	7	" " " "	7.5

Experiencing - Rater Instruction

Rater can ask only 2 questions: WHAT? and HOW?

EXP:

1. What are the words in segment? i.e., what is the individual saying?

2. How is it being said?

The rater must not ask Why, When or Where, or add anything to the context because it is the Here and Now of each verbalized segment which has to be rated.

Warning: Be sure to rate the ratee and not his conversational partner's comments or interpretation.

Read cues carefully before making stage decision. Be sure segment has passed Stage 1 before considering Stage 2 and don't consider Stage 4 without being sure segment has passed Stage 3, etc. Don't use half-stage cues before making whole stage decision. After whole stage decision has been made consult half-stage cues and only then decide if segment should be raised a half-stage.

Problem-Expression Scale

F. van der Veen and T. M. Tomlinson

This is a scale that describes the way a person specifically talks about his problems. It is not a sickness-health scale. Healthy persons can be at any point on the scale, depending upon what they say about their problems.

Different points on the scale refer to distinctly different ways of verbalizing or talking about problems. There are two descriptions, one positive and one negative, for each point except the first and last which have only one. The negative description in one point becomes the positive description for the next point, so that successive points are mutually exclusive. The total scale uses six pairs of opposite descriptions. These are: (a) talking (not talking) about a problem, (b) talking (not talking) about own direct involvement, (c) talking (not talking) about own reactions, (d) talking (not talking) about own contribution, (e) talking (not talking) about own understanding of self and (f) talking (not talking) about actual resolution. The client is given the highest rating that most accurately fits the particular selection, taking the whole selection into account. The scale is intended to be cumulative so a selection should not be rated at a certain stage unless the criteria for the stages below it are at least implicitly present in the segment.

Definitions

1. Direct involvement (in B): The client includes himself in the problem situation as he describes the problem. This means being a part of a situation in a specific manner as opposed to a general state of affairs that has no specific effect on the actions of the individual. The latter would suggest either no involvement or indirect involvement.

2. Own reaction (in C): The client talks about his feelings or behavior in reaction to the problem.

3. Contribution (in D): Refers to the part played by the individual in making the problem.

4. Understanding (in E): Refers to the client's talking about comprehension of the meaning and quality of own feelings, etc. The client may indicate that he understands them a little or a lot, it doesn't matter how much, what is important is that he is talking about his understanding of himself.

5. Actual (in F): Means that the client talks about a resolution that, for him, has really occured or is occurring.

Rating Outline for Problem Expression Scale

If:	Score:
AN	1
AY and BN	2
BY and CN	3
CY and DN	4
DY and EN	5
EY and FN	6
FY	7

Score:	Only if:
1.5	Sample fits 1, except for a slight amount of AY
2.5	" " 2, " " " " " BY
3.5	" " 3, " " " " " CY
4.5	" " 4, " " " " " DY
5.5	" " 5, " " " " " EY
6.5	" " 6, " " " " " FY

Problem Expression Scale

Stage 1. AN. The individual does not talk about problems, i.e., wrongs, difficulties, confusions, conflicts, complaints, etc.

Stage 2. AY. The individual talks about problems or problem situations.

and

BN. The individual does not talk about his direct involvement in a problem situation or event.

Stage 3. BY. The individual talks about his direct involvement in a problem situation or event.

and

CN. The individual does not talk about his own reactions in or to the problem situation.

Stage 4. CY. The individual talks about his own reaction in or to the problem situation.

and

DN. The individual does not talk about the contribution of his own reactions to the problem.

Stage 5. DY. The individual talks about the contribution of his own reactions to the problem.

and

EN. The individual does not talk about his own understanding of his feelings, experiences, or attitudes.

Stage 6. EY. The individual talks about his own understanding of his feelings, experiences, or attitudes.

and

FN. The individual does not talk about an actual resolution in terms of changes in his feelings, experiences, or attitudes.

Stage 7. FY. The individual talks about an actual resolution of the problem situation in terms of changes in his feelings, experiences, or attitudes.

Personal Constructs (PC)*

T. M. Tomlinson

Introduction

Personal constructs are the individual's psychological devices for the prediction of the meanings of his experience. Each individual has a construct system to which he refers his experience for the interpretation of its meaning. He "sees" his experience in terms of his construct system, and behaves in terms of the resulting interpretation. If the individual's constructs are rigidly held then he will interpret his experience in a highly predictable, stereotyped way. He depends on his construct system to provide meaning for his experience. As personal constructs are or become more loosely held the individual tends to react more directly to his experience and depends less on reference to his construct system to supply meaning. Placed on a continuum of manners of interpreting experience the lower end would be occupied by the individual who always checks his experience against his constructs and the upper end would be occupied by the individual who always checks his constructs against his experience. In the former case meaning is not given by experience, but by the construct system and this system is unalterable. In the latter meaning is always given in experience and if experience disagrees or is not consistent with the referent constructs, the constructs themselves are altered to agree with the experience.

Behaviorally constructs make their appearance as attitudes, beliefs, feelings, etc., about the self, others or external situations. For example an individual who holds attitudes of prejudice toward all or some minority groups can be said to have a rigid construct at least with regard to the area of prejudice. He "predicts" on the basis of his construct that all members of a particular group will behave in a certain way, and thus all members of the group are responded to in identical fashion according to the nature of the construct. Since all group members will not behave in the construct predicted way his experience will to varying degrees be incongruent with the construct.

To the extent that he regards each man according to his individual worth regardless of his group affiliation he can be said to hold a plastic construct which is congruent with experience.

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* The term "Personal Constructs" owes its existence to George Kelly, and the original elaboration of the concept into scale form is the invention of Carl R. Rogers.

It should be clear without saying that personal constructs are not of an either-or-nature. In fact the population at large can be characterized as having construct systems parts of which are like both ends of the continuum, but will fall somewhere between these two extremes. However, a client at the beginning of therapy usually falls at the lower end of the continuum and part of the process of therapy is to loosen, reinterpret and often reformulate the old construct system. Theoretically he will move from the lower to the upper end of the continuum and will pass through a number of stages intermediate between rigidity and plasticity of interpretation of experience. It is the description of these intermediate stages as well as the end points of the continuum that this scale undertakes.

Stage 1

The nature of the client's communication is such that no constructs (attitudes, beliefs, etc.) either about himself, others or external situations, is reported. The client's verbalization is banal, trite and irrelevant, e.g., he discusses the weather, baseball, etc., but nothing of a personally meaningful nature. The attitudes expressed are inconsequential in the determination of the nature of his construct system.

The client conveys the impression that he either can't or does not want to disclose his beliefs, attitudes, ideas, etc., to the therapist.

Trends to be noted:

(1) Much silence neither preceeded nor followed by personally meaningful communication about attitudes, etc.

(2) Inconsequential attitudes are expressed in which it is apparent that there is little self-involvement. The issues discussed have nothing to do with the present position of the client, e.g., weather, baseball, cars, the quality of hospital food, etc.

(3) The entire tenor of the client's communication suggests he is simply trying to pass time and has no intention of expressing feelings about any but the most shallow and meaningless issues.

Stage 2

Personal constructs are extremely rigid, unrecognized as constructs, and thought of as external facts.

The individual seems unaware that the meaning imputed to his experience has come from himself and is not necessarily inherent in the situation. To him the meanings of external situations are facts, not experience subject to different interpretations.

Trends to be noted:

(1) Statements, particularly those expressing value judgments, are made in absolute undifferentiated global terms.

(2) The expressed constructs will for the most part be confined to external situations. Seldom will constructs about oneself be verbalized. Sometimes the individual will make statements in which he tries in an objective remote fashion to characterize himself or his life; these statements seem to have the intent of placing the individual in a context which can be defined in terms of externals such as historical time, geographical place, and objectified (absolute) moral values.

(3) The individual seems to place himself apart from external situations. He expresses attitudes about externals in a rigid way but fails to perceive his connection to these externals in that it is his attitudes that have defined the situation not any characteristics inherent in the situation.

(4) The interpretations of external events are seen in black or white terms. Things cannot or couldn't be interpreted differently because things "are just this way."

Stage 3

Personal constructs are still extremely rigid, but the person's construal of external events now includes some references to himself. His talk is not confined solely to external situations but may involve the effects external situations have had on him and he may detail his response to these external situations.

Trends to be noted:

(1) The client may appear to be justifying his position. He seems to be defending his perception of his environment and his reactions to it. To do this he may try to enlist the aid of the therapist, e.g., by asking the therapist to confirm his experience.

(2) The client may appear to be clinging to his constructs "for dear life." The quality of his verbalization is such as to suggest that the client is saying, in effect, "this (the way I see things) has just got to be correct," but at some, as yet unacknowledged and unaccepted level, he seems to doubt this.

Stage 4

Personal constructs are rigid but at times the client will indicate verbally or in his approach to his experience that he recognizes the possibility that his perception may not be or was not correct.

Occasionally he may verbally or in his approach to understanding his experience, question the validity of a construct. The form taken of the questioning is more likely to be a recognition of possible "errors" in interpretation of experience rather than suggesting that a different approach would have been taken.

Trends to be noted:

(1) As the client recounts his behavior he conveys the impression that he is beginning to see how he construed his experience through his own eyes, rather than with a blind acceptance of events and situations as external facts having no relation to himself.

(2) Here the verbalizations have more of the flavor of "explanations" for behavior. He is not so much trying to justify his behavior as he is seeking to help himself and the therapist understand how he saw or sees things.

(3) There is a general feeling of unhappiness about his interpretations of experience.

(4) He may identify characteristic ways of behaving in different situations, e.g., "I must punish myself" or "I was always the pacifier." The above ways of behaving are global and undifferentiated, but differ from stage 2 behavior in that they are constructs about the self, not externals.

Stage 5

There is a beginning loosening of personal constructs. With some frequency it is discovered that experience has been construed as having a certain meaning but that this meaning is not inherent, absolute, nor externally valid at all times. There is a questioning of the validity of some present constructs, organizations of experience, and meanings and feelings.

Trends to be noted:

(1) Increasingly there is a discussion of specific, self constructs rather than global ones as found in stages 2 and 3, e.g., within the global construct "I must punish myself" the client details specific behavior and specific ways he saw things, and he begins to ask himself why he saw things the way he did.

(2) The client's verbalization suggests that he is quite aware of the way he has construed his experience. The significant feature is his awareness of the inappropriateness of his approach to his experience, i.e., his questioning of the validity of his interpretation of the events which compose experience.

(3) This stage may be characterized as one in which the client reinterprets his experience but doesn't reformulate it. He expresses his awareness that he saw things in a certain way and he is aware that his experience could have been interpreted differently, but he's not at all sure of just how. He is in the process of dropping old constructs, but he has not as yet substituted different, more appropriate ones.

Stage 6

There is a more or less continuous loosening of constructs as the client realizes that many constructs which have seemed to be solid guides are only ways of construing a moment of experiencing. The difference between this stage and stage 5 is that in addition to continued loosening of constructs there is tentative "commitment" to new constructs. The client recognizes these new ways of construing experience are more appropriate, realistic, etc., ways of construing himself and events.

Trends to be noted:

(1) Here the client is often clearly able to contrast his past constructs with his new and different ways of interpreting his experience. He seems to have discovered that he doesn't have to behave in a certain way, that there are alternative interpretations for experience and he is sharply aware of the difference between past and present constructs. Further, he is able to describe the alternatives. He not only questions validity but also makes "recommendations" for change. He perceives clearly how and what he could or can do differently.

(2) The new constructs are tentative, as if he is afraid to give up completely the old ways of construing his experience. The flavor is sort of "it could be this way, if I let it."

(3) Often the dissolving of old constructs will have an impelling immediacy about it. The client might say something like, "My God, all my life I've behaved like this, and it wasn't necessary." The quality is one of immediate fresh discovery coupled with the feeling that this is experience which means something--it's the right way to see things.

Stage 7

Experience is tentatively construed as having a certain meaning but this meaning is always held loosely and is checked and rechecked against further experiencing.

Trends to be noted:

(1) The client seems to realize that even these new constructs, right as they seem to be, can be held loosely and are subject to constant reinterpretation in accord with different experience. He can predict his own behavior only by knowing the events which compose the situation in which the behavior occurs.

(2) The client will explore at length the meaning of his new constructs, making changes when appropriate and making minor, fresh discoveries within the framework of the new construct. These minor discoveries may be about past experiences reinterpreted in light of new constructs or they may be amendments to the new constructs in light of present experience.

(3) The quickness of change of constructs (minor) indicates the looseness of the present major construct. It is open to constant reinterpretation and amendment.

APPENDIX C

Raw Data*

* Group designations conform in all cases to those in the diagram on Page 8.

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Grades Received C-1

Relationship Inventory (Person most liked) C-3

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Relationship Inventory (Group leader) C-9

F Scale C-12

Q-Sort C-12

MMPI C-14

Process Scales (PC,EXP,PES). C-24

GRADES

		A_1			B_1			C_1		
		6 wk.	12 wk.	final	6 wk.	12 wk.	final	6 wk.	12 wk.	final
subj.	1	62	80	186	61	78	160	88	71	196
	2	60	83	132	57	82	166	92	82	196
	3	57	74	122	60	63	144	88	97	194
	4	62	80	204	96	93	234	92	88	196
	5	59	80	194	88	74	198	92	70	172
	6	52	74	192	93	96	202			
			A_2			B_2			C_2	
subj.	1	61	79	182	57	68	162	89	78	208
	2	60	75	176	61	79	186	92	92	224
	3	44	77	116	54	73	148	92	78	148
	4	52	85	186	90	77	184	90	93	226
	5	52	67	151	89	96	200	94	92	212
	6				96	89	232			
			A_3			B_3			C_3	
subj.	1	56	81	182	46	78	152	96	88	192
	2	55	73	162	59	76	198	88	95	228
	3	41	81	146	63	77	178	95	87	210
	4	47	81	122	88	84	192	90	88	176
	5	62	76	184	88	91	190	87	89	194
	6	59	84	170	89	81	192	88	96	202

PRECEDING PAGE MISSING

GRADES

	A			B			C		
	A_4			B_4			C_4		
	6 wk.	12 wk.	final	6 wk.	12 wk.	final	6 wk.	12 wk.	final
subj. 1	49	78	138	62	73	120	91	89	182
2	82	69	172	61	77	156	89	90	188
3	61	94	176	38	77	142	94	97	208
4	56	75	158	90	94	204	94	80	200
5	57	70	180	88	82	164	88	94	210
				97	98	230			

PRECEDING PAGE MISSING

RI MOST SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
B subj.	1	41	31	40	41	32	41	36	28	42	18	18	50
2	2	51	57	56	38	41	53	58	55	47	34	44	60
	3	38	24	36	41	36	46	32	23	41	36	35	49
	4	35	36	51	31	34	53	42	46	54	23	40	67
	5	56	65	59	56	54	48	66	63	47	42	26	34
	6	18	45	77	26	35	59	53	55	52	51	38	37
C subj.	1	50	51	51	49	38	39	55	53	48	29	35	56
2	2	38	45	57	41	47	56	49	62	63	18	04	36
	3	55	61	56	40	52	62	41	56	65	23	43	70
	4	41	64	68	40	57	67	36	62	76	30	34	54
	5	47	65	68	35	61	76	41	67	76	23	29	56
A subj.	1	66	66	50	47	45	48	54	60	56	34	49	65
3	2	59	61	52	57	48	41	52	57	55	41	35	56
	3	54	46	42	46	46	50	53	44	41	55	44	39
	4	52	58	56	45	51	56	50	58	58	50	46	46
	5	40	47	57	33	31	48	43	48	55	40	43	53
	6	72	75	53	53	69	66	73	65	42	41	48	57
B subj.	1	52	45	43	33	37	54	48	51	53	40	26	36
3	2	53	61	58	40	51	61	61	62	51	34	44	60
	3	39	42	53	28	30	52	47	44	47	30	24	44
	4	68	61	43	31	29	48	54	37	33	40	30	40
	5	38	52	64	24	34	60	31	54	73	23	31	58
	6	26	47	71	18	40	72	32	47	65	22	21	49

RI MOST SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
C_3	subj. 1	54	52	48	44	43	49	50	48	48	46	39	43
	2	42	36	44	36	32	46	56	45	39	22	26	54
	3	49	57	58	40	50	60	54	56	52	41	44	53
	4	60	60	50	47	52	55	58	54	46	45	52	57
	5	47	58	61	42	39	47	38	48	60	11	23	62
	6	37	32	45	14	09	45	41	50	59	21	25	54

RI LEAST SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
A 1	subj. 1	17	17	50	19	19	50	36	36	50	34	34	50
	2	58	00	00	79	19	00	76	32	06	46	43	47
	3	26	26	50	20	20	50	39	39	50	17	17	50
	4	25	28	53	24	21	47	46	32	36	19	15	46
	5	63	63	50	48	48	50	60	60	50	21	21	50
	6	36	36	50	23	23	50	31	31	50	23	23	50
B 1	subj. 1	11	06	45	09	11	52	19	23	54	27	35	58
	2	28	45	33	17	35	68	42	58	66	16	46	80
	3	00	19	69	25	25	50	17	20	53	38	24	36
	4	32	41	59	15	11	46	23	29	56	17	16	49
	5	42	23	31	19	02	33	45	24	29	36	37	51
	6	41	38	47	30	15	35	32	21	39	20	32	62
C 1	subj. 1	22	20	48	22	21	49	40	34	44	36	38	52
	2	35	12	26	22	10	38	52	52	50	34	53	69
	3	37	30	43	15	18	53	37	40	53	16	36	70
	4	24	03	29	38	16	28	36	13	27	34	05	21
	5	15	15	50	26	26	50	10	10	50	29	29	50
A 2	subj. 1	42	40	48	14	18	54	16	40	74	02	18	66
	2	07	09	52	07	09	52	38	22	34	26	20	44
	3	44	21	27	37	12	25	44	26	32	47	18	21
	4	14	47	83	22	34	62	39	39	50	36	35	49
	5	33	24	41	24	15	41	40	17	27	12	11	49

* Plus 50 to convert negative scores.

RI LEAST SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
B 2	subj. 1	06	17	61	10	17	57	14	03	39	30	12	32
	2	21	01	30	21	15	44	33	20	37	29	58	79
	3	31	18	37	22	17	45	37	21	34	33	22	39
	4	32	22	40	30	34	54	34	40	56	32	32	50
	5	40	23	33	29	13	34	31	13	32	17	00	33
	6	23	23	50	22	13	41	35	26	41	43	40	47
C 2	subj. 1	29	44	65	21	22	51	19	29	60	29	22	43
	2	16	30	54	20	18	48	23	16	43	18	21	53
	3	27	57	60	21	42	71	26	47	71	11	32	71
	4	32	30	48	11	01	46	18	09	41	27	21	44
	5	41	48	57	25	27	52	41	17	26	32	20	38
A 3	subj. 1	00	23	73	02	26	74	03	23	70	54	08	04
	2	29	01	22	21	22	51	36	28	42	25	23	48
	3	50	46	46	42	46	54	42	44	52	42	44	52
	4	46	53	57	42	49	57	40	58	68	46	42	46
	5	31	35	54	16	14	48	31	40	59	35	36	51
	6	29	38	59	30	00	20	52	51	49	35	36	51
B 3	subj. 1	14	09	45	19	22	53	16	27	61	34	39	55
	2	50	49	49	46	45	49	59	57	48	28	26	48
	3	38	28	40	30	24	44	45	34	39	19	20	51
	4	41	48	57	11	11	50	16	10	44	07	10	53
	5	43	32	39	27	21	44	50	45	45	32	29	47
	6	27	28	51	27	28	51	41	29	38	24	32	58

RI LEAST SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
C	subj. 1	42	36	44	34	32	48	38	36	48	28	22	44
3	2	17	14	47	19	16	47	46	20	24	20	20	50
	3	40	28	38	35	29	44	49	42	43	42	50	58
	4	60	60	50	47	52	55	58	54	46	45	52	57
	5	35	29	44	16	21	55	24	29	55	13	29	66
	6	07	15	58	11	05	44	41	48	57	42	34	42

RI COUNSELOR SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
A subj. 1	1	52	48	46	47	50	53	59	53	44	36	34	48
	2	70	68	48	65	60	45	70	71	51	71	70	49
	3	50	50	50	43	43	50	64	64	50	37	37	50
	4	58	62	54	43	44	51	63	67	54	48	52	54
	5	48	48	50	34	34	50	55	55	50	26	26	50
	6	62	54	42	44	50	56	37	45	58	51	46	45
B subj. 1	1	63	30	17	50	19	19	58	28	20	45	30	35
	2	33	43	60	47	39	42	64	62	48	49	47	48
	3	40	63	73	23	39	66	41	42	51	18	37	69
	4	51	40	39	47	22	25	32	44	62	50	41	41
	5	42	35	43	22	14	42	28	14	36	39	16	27
	6	53	38	35	11	28	67	17	27	60	37	25	38
C subj. 1	1	54	62	58	43	49	56	50	59	59	38	35	47
	2	42	40	48	27	25	48	10	16	56	42	47	55
	3	54	69	65	27	29	52	51	65	64	48	67	69
	4	70	67	47	44	46	52	52	59	57	47	45	48
	5	45	45	50	34	34	50	48	48	50	34	34	50
A subj. 2	1	54	42	38	44	36	42	58	12	04	52	31	29
	2	40	37	47	52	44	42	43	46	53	40	39	49
	3	07	38	81	07	33	76	21	46	75	16	43	77
	4	73	71	48	59	63	54	79	76	47	72	66	44
	5	54	51	47	40	54	64	62	59	47	46	37	41

* Plus 50 to convert negative scores.

RI COUNSELOR SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
B	subj. 1	53	55	52	49	44	44	43	41	48	30	39	59
2	2	48	39	41	52	51	49	49	45	46	37	19	32
	3	50	30	30	44	32	38	32	43	61	37	24	37
	4	34	34	50	50	36	36	44	46	52	50	41	41
	5	62	23	11	64	34	20	61	16	05	62	25	13
	6	41	49	58	44	61	47	59	32	23	51	51	50
C	subj. 1	54	47	43	41	22	31	51	47	46	31	37	56
2	2	25	39	64	22	39	67	34	47	63	41	36	45
	3	57	45	38	49	36	37	52	56	54	45	35	40
	4	56	71	65	36	39	67	41	63	72	32	28	46
	5	48	65	67	33	63	80	51	75	74	31	47	66
A	subj. 1	47	49	52	50	48	48	76	54	28	50	40	40
3	2	50	54	54	48	45	47	58	60	52	48	40	42
	3	46	47	51	44	46	52	46	44	48	44	42	48
	4	51	53	52	45	52	57	46	55	59	45	51	56
	5	40	40	50	34	38	54	53	57	54	40	48	58
	6	77	78	51	59	55	46	69	66	47	49	55	57
B	subj. 1	24	37	63	39	28	39	40	44	54	31	32	51
3	2	49	52	53	44	59	65	63	73	60	28	39	61
	3	37	40	53	27	36	59	47	40	43	11	18	57
	4	66	42	26	27	15	38	32	37	55	35	32	47
	5	53	52	49	46	37	41	64	57	43	43	43	50
	6	44	44	50	42	42	50	29	29	50	24	24	50

RI COUNSELOR SCALES

		R SCALE			E SCALE			C SCALE			U SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
C	subj. 1	48	57	59	44	42	48	40	48	58	36	41	55
3	2	28	28	50	30	25	45	49	48	49	30	32	52
	3	51	42	41	46	39	43	61	47	36	50	42	42
	4	60	60	50	47	52	55	61	54	43	45	52	57
	5	50	45	45	49	34	35	54	44	40	26	25	49
	6	38	36	48	28	31	53	54	55	51	35	45	60

		F Scale Raw Scores			Q Sort Raw Scores**		
		pre-	post-	change*	pre-	post-	change***
A_1 subj.	1	29	32	53	52	42	84
	2	93	124	81	91	69	93
	3	44	66	72	93	91	71
	4	72	68	46	93	39	68
	5	66	84	68	113	56	81
	6	56	64	58	73	66	56
B_1 subj.	1	48	50	52	119	91	89
	2	73	97	74	65	26	33
	3	111	112	51	71	59	45
	4	41	45	54	112	27	6
	5	47	33	36	122	91	100
	6	41	26	63	113	71	93
C_1 subj.	1	24	24	50	100	79	95
	2	36	65	21	95	74	89
	3	53	56	53	107	100	95
	4	43	59	66	97	76	83
	5	73	67	44	69	21	68
A_2 subj.	1	98	89	41	81	44	55
	2	107	105	48	100	54	76
	3	52	38	36	100	56	81
	4	51	52	51	113	74	85
	5	50	42	42	95	91	79
B_2 subj.	1	82	90	58	69	37	28
	2	90	78	38	133	97	93
	3	63	81	68	51	28	32
	4	60	68	58	1	1	65
	5	48	38	40	110	85	89
	6	41	57	66	102	91	87
C_2 subj.	1	78	79	51	129	91	89
	2	47	37	60	100	1	18
	3	79	73	44	130	69	87
	4	34	22	38	160	89	89
	5	29	21	42	122	74	79
A_3 subj.	1	105	97	42	116	69	69
	2	70	58	38	95	71	91
	3	59	72	63	51	29	54
	4	59	72	63	126	91	87
	5	80	91	61	91	23	81
	6	48	43	45	85	59	65

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* Plus 50 to convert negative scores.

** Correlation scores converted to r. scores.

*** Obtained from correlation of pre and post scores.

		F Scale Raw Scores			Q Sort Raw Scores**		
		pre-	post-	change*	pre-	post-	change***
B_3 subj.	1	84	84	50	76	18	18
	2	47	71	74	133	85	89
	3	67	65	48	69	11	1
	4	25	22	47	74	54	18
	5	87	77	40	71	76	62
	6	88	97	59	50	62	47
C_3 subj.	1	71	72	51	110	74	81
	2	64	61	47	91	34	46
	3	38	38	50	119	74	95
	4	49	45	46	153	89	105
	5	40	67	77	87	87	63
	6	37	51	64	76	1	1
A_4 subj.	1	76	79	53	68	45	73
	2	69	67	48	113	58	44
	3	95	86	41	78	34	63
	4	62	58	46	105	38	22
	5	68	68	50	76	29	47
B_4 subj.	1	67	78	61	66	32	49
	2	66	74	58	97	68	66
	3	66	56	40	71	20	22
	4	64	77	63	119	74	78
	5	50	48	48	126	91	83
	6	82	89	58	126	76	87
C_4 subj.	1	67	35	18	133	85	95
	2	59	47	62	99	63	66
	3	23	16	43	116	91	83
	4	104	98	44	97	42	81
	5	61	75	36	138	58	45

MMP7 RAW SCORES

		K SCALE			F SCALE			Hy SCALE			Hs SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
A_1 subj.	1	22	20	18	03	03	20	20	21	21	13	11	18
	2	19	21	22	01	04	23	21	21	20	15	16	21
	3	16	18	22	08	07	19	24	22	18	14	13	19
	4	12	12	20	06	06	20	11	11	20	01	07	26
	5	14	16	12	06	03	17	21	18	17	09	08	19
	6	12	12	20	05	05	20	19	21	22	13	11	18
B_1 subj.	1	18	24	26	01	02	21	24	27	23	13	18	25
	2	14	17	23	00	01	21	21	20	19	17	16	19
	3	10	06	16	03	10	27	12	11	19	11	10	32
	4	12	10	18	04	08	24	26	25	19	16	14	18
	5	20	21	21	02	02	20	23	23	20	13	14	21
	6	21	19	18	06	06	20	24	25	21	18	18	20
C_1 subj.	1	20	23	23	06	05	19	23	26	23	14	24	30
	2	20	21	21	01	02	21	17	16	19	11	12	21
	3	23	23	20	03	03	20	27	27	20	02	14	22
	4	18	17	19	07	07	20	20	19	19	12	14	22
	5	10	10	20	05	01	16	15	16	21	08	07	19
A_2 subj.	1	20	22	22	06	03	17	35	24	09	29	22	13
	2	19	25	26	01	05	24	21	25	24	14	16	22
	3	16	15	19	02	02	20	21	20	19	10	08	18
	4	16	17	21	02	05	23	22	24	22	13	12	19
	5	10	17	37	11	06	15	19	17	18	12	11	19

* Plus 20 to convert negative scores

		K SCALE			F SCALE			Hy SCALE			Hs SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
B_2 subj.	1	17	16	19	10	07	17	19	20	21	15	14	19
	2	13	12	19	09	04	15	17	18	21	12	11	19
	3	15	12	17	10	17	27	22	18	16	12	15	23
	4	22	20	18	02	03	21	18	16	18	12	13	21
	5	19	19	20	01	00	19	25	25	20	13	12	19
	6	15	09	14	02	02	20	17	18	21	10	09	19
C_2 subj.	1	08	10	22	03	02	19	17	17	20	11	15	24
	2	12	15	23	07	08	21	33	24	11	13	13	20
	3	20	21	21	03	00	17	23	23	20	16	16	20
	4	19	17	18	04	04	20	25	20	15	13	10	17
	5	18	21	23	02	06	24	24	24	20	13	14	21
A_3 subj.	1	19	19	20	01	02	21	20	19	19	12	11	19
	2	20	16	16	01	00	19	20	18	18	15	09	14
	3	14	17	23	05	06	21	18	28	30	09	17	28
	4	21	22	21	02	03	21	21	23	22	12	12	20
	5	09	14	25	12	00	08	25	20	15	11	08	17
	6	13	12	19	09	08	19	26	24	18	18	11	13
B_3 subj.	1	04	14	30	10	28	38	20	26	26	10	23	33
	2	19	19	20	02	01	19	15	19	24	11	14	23
	3	12	14	22	09	13	24	23	23	20	16	16	20
	4	12	10	18	10	11	21	26	25	19	21	20	19
	5	13	12	19	04	04	20	21	18	17	10	09	19
	6	08	07	19	09	07	18	11	10	19	06	08	22

		K SCALE			F SCALE			Hy SCALE			Hs SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
C_3 subj.	1	23	17	14	03	03	20	30	20	10	19	10	11
	2	13	13	20	02	08	26	23	26	23	15	18	23
	3	25	23	18	01	03	22	21	21	20	13	14	21
	4	19	29	30	03	02	19	25	20	15	13	15	22
	5	12	11	19	05	06	21	18	19	21	09	08	19
	6	12	11	19	08	04	16	15	16	21	10	08	18
A_4 subj.	1	19	21	22	03	03	20	26	23	17	17	21	23
	2	13	15	22	05	03	18	21	22	21	10	12	22
	3	07	09	22	05	10	25	16	11	15	09	06	17
	4	12	13	21	00	04	24	16	23	27	12	12	20
	5	18	19	21	02	03	21	23	20	17	17	18	21
B_4 subj.	1	14	xx	xx	05	xx	xx	29	xx	xx	16	xx	xx
	2	21	24	23	03	01	18	59	22	00	38	16	36
	3	10	11	21	10	05	15	16	17	21	12	10	18
	4	13	15	22	03	03	20	20	19	19	13	14	21
	5	16	15	19	07	07	20	22	24	22	13	11	18
	6	19	18	19	02	01	19	21	20	19	11	10	19
C_4 subj.	1	17	21	24	01	02	21	16	22	26	09	14	25
	2	21	18	17	01	02	21	20	21	21	11	10	19
	3	14	13	19	03	04	21	16	14	18	09	08	19
	4	13	18	25	01	01	20	14	21	27	08	11	23
	5	12	16	24	10	06	16	20	21	21	11	12	21

MMPI RAW SCORES

		Pd SCALE			D SCALE			Mf SCALE			Pa SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
A_1 subj.	1	21	19	18	17	15	18	35	35	20	08	09	21
	2	21	27	26	15	18	23	41	43	22	06	09	23
	3	21	23	22	20	25	25	43	43	20	12	14	22
	4	20	25	25	15	15	20	22	22	20	13	13	20
	5	28	26	18	12	11	19	22	22	20	12	13	21
	6	19	17	18	14	10	16	24	22	18	12	12	20
B_1 subj.	1	21	24	23	21	21	20	38	39	21	09	13	24
	2	15	18	23	23	26	23	43	43	20	09	05	16
	3	19	21	22	20	26	26	33	36	23	07	06	19
	4	17	24	27	33	34	21	39	42	23	13	15	22
	5	18	20	22	17	15	18	42	46	24	11	10	19
	6	24	25	21	18	17	19	39	40	21	13	17	24
C_1 subj.	1	19	21	22	21	19	18	36	35	19	06	12	26
	2	25	21	16	19	16	17	35	36	21	04	05	21
	3	11	20	29	20	20	20	40	40	20	10	10	20
	4	28	25	17	23	17	14	23	20	17	09	09	20
	5	16	19	23	17	19	22	32	31	19	10	13	23
A_2 subj.	1	23	25	22	20	17	17	39	44	25	15	12	17
	2	25	24	19	22	19	17	26	30	24	10	10	20
	3	22	23	21	14	13	19	34	40	26	11	10	19
	4	16	18	22	18	15	17	37	33	16	10	09	19
	5	14	18	24	21	13	12	44	37	13	16	13	17

* Plus 20 to convert negative scores.

		Pd SCALE			D SCALE			Mf SCALE			Pa SCALE		
		pre-	post-	change *	pre-	post-	change *	pre-	post-	change *	pre-	post-	change *
B$_2$ subj.	1	21	21	20	17	28	31	25	30	25	12	09	17
	2	16	17	21	19	28	29	39	42	23	07	08	21
	3	26	24	18	24	23	19	31	25	14	10	13	23
	4	24	20	16	20	18	18	24	24	20	06	05	19
	5	20	21	21	22	19	17	39	41	22	11	14	23
	6	22	17	25	19	15	16	43	46	23	07	07	20
C$_2$ subj.	1	17	15	18	21	16	15	44	44	20	08	07	19
	2	23	23	20	33	27	14	42	39	17	14	15	21
	3	21	25	24	19	20	21	39	35	16	10	09	19
	4	20	15	15	18	17	19	44	38	14	09	08	19
	5	19	19	20	29	21	12	32	33	21	09	13	24
A$_3$ subj.	1	22	21	19	18	19	21	40	32	12	11	13	22
	2	23	16	13	21	15	14	39	39	20	09	11	22
	3	16	22	24	22	27	25	43	41	19	12	13	21
	4	17	19	22	17	16	19	34	38	24	08	08	20
	5	25	30	25	16	16	20	35	40	25	18	15	17
	6	26	23	17	19	22	23	37	42	25	11	09	18
B$_3$ subj.	1	22	29	27	26	24	18	24	30	26	15	14	19
	2	15	20	25	17	17	20	37	38	21	09	09	20
	3	20	24	24	22	27	25	25	30	25	10	11	21
	4	28	29	21	26	28	22	43	45	22	13	13	20
	5	25	20	15	17	15	18	30	34	24	06	07	21
	6	22	20	18	15	17	22	12	16	24	06	05	19

		Pd SCALE			D SCALE			Mf SCALE			Pa SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
C_3 subj.	1	22	16	14	29	20	11	38	30	12	14	10	16
	2	21	29	28	23	27	24	40	44	24	09	15	26
	3	24	24	20	15	14	19	37	35	18	10	11	21
	4	22	22	20	17	16	19	35	36	21	04	06	22
	5	18	16	18	14	14	20	36	32	16	11	11	20
	6	21	15	14	21	18	17	43	35	12	18	14	16
A subj. 4	1	28	25	17	22	23	21	29	32	23	07	09	22
	2	18	16	18	22	24	22	40	46	26	08	05	17
	3	21	24	23	18	18	20	35	31	16	06	01	15
	4	18	22	24	21	25	24	31	39	28	31	09	00
	5	16	25	29	15	18	23	36	29	13	07	07	20
B subj. 4	1	21	xx	xx	34	xx	xx	33	xx	xx	11	xx	xx
	2	43	26	13	50	17	00	38	35	17	10	08	18
	3	21	17	16	29	16	07	36	38	22	12	12	20
	4	17	21	24	17	12	15	23	23	20	08	10	22
	5	25	28	23	19	21	22	31	29	19	08	08	20
	6	26	21	15	19	17	18	45	49	24	07	09	22
C subj. 4	1	21	21	20	17	19	22	22	26	24	06	10	24
	2	20	21	21	20	19	19	39	35	16	10	10	20
	3	17	14	17	21	14	13	33	35	22	04	05	21
	4	18	17	19	17	17	20	32	34	22	04	07	23
	5	18	20	22	26	17	11	41	42	21	14	15	21

MMPI RAW SCORES

		Pt SCALE			Sc SCALE			Ma SCALE			Si SCALE		
		pre	post-	change	pre-	post-	change	pre-	post-	change	pre-	post-	change
A	subj. 1	23	22	17	25	25	20	18	21	23	20	22	22
1	2	23	27	24	25	30	25	16	20	24	20	25	25
	3	35	29	14	36	29	27	24	19	15	30	24	14
	4	14	26	32	17	29	32	24	26	22	28	28	20
	5	23	19	16	24	23	19	27	22	15	13	13	20
	6	34	22	08	30	28	18	26	22	16	38	23	05
B	subj. 1	26	31	25	24	31	27	20	22	22	14	15	21
1	2	26	36	30	19	24	25	12	19	27	37	33	16
	3	30	32	22	20	30	30	26	19	13	34	49	35
	4	35	39	24	31	39	28	15	16	21	42	53	31
	5	22	23	21	23	25	22	17	18	21	21	17	16
	6	29	32	23	32	35	23	19	28	29	16	17	21
C	subj. 1	26	29	23	25	28	23	17	21	24	25	17	12
1	2	27	24	17	24	23	19	22	19	17	26	22	16
	3	02	25	43	04	27	43	13	18	25	27	27	20
	4	22	24	22	27	25	18	15	24	29	32	16	04
	5	38	35	17	32	30	18	18	16	18	40	36	16
A	subj. 1	35	29	14	33	32	19	20	20	20	11	22	31
2	2	28	28	20	28	25	13	22	15	13	28	25	17
	3	25	21	16	26	23	13	21	20	19	16	19	23
	4	27	25	18	25	23	18	29	28	19	13	13	20
	5	37	31	14	33	23	10	24	31	27	41	27	06

		Pt SCALE			Sc SCALE			Ma SCALE			Si SCALE		
		pre-	post-	change *	pre-	post-	change *	pre-	post-	change*	pre-	post-	change*
B subj.	1	27	33	26	34	34	20	24	22	18	45	49	24
2	2	33	34	21	24	23	19	22	17	15	35	33	18
	3	41	30	09	33	44	31	15	27	32	38	32	14
	4	25	27	22	27	25	18	15	18	13	31	30	19
	5	30	22	12	24	21	17	23	20	17	12	14	22
	6	22	23	21	22	20	18	23	20	17	27	30	23
C subj.	1	24	19	15	19	18	19	20	21	21	28	32	24
2	2	39	34	15	37	28	11	23	18	15	31	39	22
	3	25	25	20	24	24	20	23	20	17	14	14	20
	4	28	24	16	25	19	14	19	17	18	21	21	20
	5	28	30	22	24	28	24	23	22	19	31	31	20
A subj.	1	32	31	19	26	25	19	15	20	25	19	20	21
3	2	32	22	10	26	19	13	19	18	19	28	26	18
	3	31	36	25	31	35	24	24	20	16	29	26	17
	4	23	24	21	22	25	23	18	16	18	15	19	24
	5	30	30	20	32	23	11	18	20	22	26	24	18
	6	32	38	26	32	38	26	31	31	20	16	25	29
B subj.	1	36	38	22	27	41	34	20	31	31	36	29	13
3	2	22	22	20	22	21	19	13	17	24	12	13	21
	3	29	34	25	28	32	24	14	15	21	42	45	23
	4	42	39	17	45	39	14	22	25	23	32	29	17
	5	23	25	22	29	27	18	26	27	21	10	12	22
	6	19	20	21	23	17	14	21	18	17	27	31	24

		Pt SCALE			Sc SCALE			Ma SCALE			Si SCALE		
		pre-	post-	change*	pre-	post-	change*	pre-	post-	change*	pre-	post-	change*
C	subj. 1	34	21	07	32	22	10	23	13	10	17	21	24
3	2	30	34	24	29	36	27	28	29	21	28	41	33
	3	27	27	20	26	24	18	14	16	22	18	19	21
	4	23	33	30	22	31	29	20	21	21	17	13	16
	5	22	15	13	27	17	10	20	16	16	23	26	23
	6	26	29	23	26	22	16	22	17	45	33	35	22
A	subj. 1	27	34	27	28	36	18	20	23	23	18	21	23
4	2	31	31	20	31	25	14	19	15	16	32	35	23
	3	32	27	15	24	27	23	16	18	22	43	38	15
	4	08	35	47	25	28	23	25	18	13	16	31	35
	5	30	31	21	28	29	21	20	23	23	17	18	21
B	subj. 1	37	xx	xx	33	xx	xx	14	xx	xx	32	xx	xx
4	2	24	26	22	27	25	18	21	22	21	18	14	16
	3	29	32	23	26	24	18	22	17	15	38	35	17
	4	22	22	20	24	26	22	16	20	24	29	25	16
	5	28	25	23	27	23	15	15	22	27	31	27	16
	6	34	32	18	31	27	16	24	19	15	27	30	23
C	subj. 1	25	26	21	19	25	26	17	22	25	18	21	23
4	2	24	23	19	24	25	21	18	23	25	17	20	23
	3	23	18	15	18	19	21	11	17	26	23	27	24
	4	24	26	22	20	23	23	23	23	20	23	18	15
	5	30	32	22	27	33	26	11	18	27	42	38	16

MMPI RAW SCORES

	subj.	L SCALE pre-	L SCALE post-	change*
A 1	1	05	04	19
	2	07	04	17
	3	04	04	20
	4	00	00	20
	5	03	05	22
	6	00	01	21
B 1	1	02	02	20
	2	02	04	22
	3	03	03	20
	4	01	07	26
	5	08	07	19
	6	06	04	18
C 1	1	05	04	19
	2	05	03	18
	3	07	07	20
	4	05	04	19
	5	02	01	19
A 2	1	06	08	22
	2	03	05	22
	3	03	04	21
	4	07	06	19
	5	02	04	22

	subj.	L SCALE pre-	L SCALE post-	change*
B 2	1	01	03	22
	2	04	04	20
	3	08	05	17
	4	07	05	18
	5	05	01	16
	6	05	04	19
C 2	1	03	03	20
	2	03	04	21
	3	04	03	19
	4	03	05	22
	5	10	05	15
A 3	1	02	03	21
	2	04	02	18
	3	05	06	21
	4	04	04	20
	5	01	02	21
	6	02	03	21
B 3	1	02	06	24
	2	02	04	22
	3	04	03	19
	4	02	01	19
	5	02	03	21
	6	01	01	20

* Plus 20 to convert negative scores

	subj.	L SCALE pre-	L SCALE post-	change
C 3	1	06	01	15
	2	02	00	18
	3	04	01	17
	4	06	00	14
	5	01	03	22
	6	09	29	40
A 4	1	01	00	19
	2	02	00	18
	3	01	00	19
	4	02	02	20
	5	04	02	18
B 4	1	03	xx	xx
	2	04	04	20
	3	02	02	20
	4	02	01	19
	5	00	02	22
	6	03	03	20
C 4	1	03	06	23
	2	11	08	17
	3	05	03	18
	4	02	05	23
	5	04	04	20

RAW SCORES - PROCESS SCALES **

Group A_1

		1/2						1/2															
		PC		EXP		PES		PC		EXP		PES		$\bar{\bar{X}}$PC		$\bar{X}$PC	$\bar{X}$EXP		$\bar{X}$EXP	$\bar{X}$PES		$\bar{X}$PES	$\overline{GM}$
		J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. I.	1.	15	35	30	25	50	25	10	10	15	20	15	15	13	23	18	23	23	23	38	20	29	23
	2.	10	10	10	15	10	10	10	25	15	15	10	10	10	18	14	13	15	14	10	10	10	13
	3.	10	10	10	15	10	10	10	25	15	30	10	25	10	18	14	13	23	18	10	18	14	16
	4.	35	30	35	20	45	25	10	10	15	20	10	20	23	20	22	25	20	23	28	23	25	24
	5.	15	60	40	15	35	30	40	45	25	30	40	15	28	53	41	33	23	28	38	23	31	33
Subj. II.	1.	10	10	15	15	40	20	10	25	15	20	20	15	10	18	14	15	18	17	30	18	24	18
	2.	10	10	15	15	10	15	10	10	10	15	10	10	10	10	10	13	15	14	10	13	12	12
	3.	10	10	15	20	10	15	10	30	15	15	10	20	10	20	15	15	18	16	10	18	14	15
	4.	30	30	20	15	20	10	30	25	15	25	20	20	30	28	29	18	20	19	20	15	18	33
	5.	10	10	10	15	10	10	40	35	35	30	50	40	25	23	24	23	23	23	30	25	38	25
* Subj. III.	1.	60	35	15	20	20	20	15	30	10	20	20	20	38	33	36	13	20	17	20	20	20	24
	2.	10	10	15	15	15	20	10	10	10	15	10	15	10	10	10	13	15	14	13	18	16	13
	3.	10	20	10	15	10	15	10	25	15	15	15	15	10	23	17	13	15	14	13	15	14	15
	4.	10	10	15	15	10	15	10	10	15	15	15	25	10	10	10	15	15	15	13	20	17	14
	5.	10	10	15	15	10	15	10	10	15	15	15	25	10	10	10	15	15	15	13	20	16	14
Subj. IV.	1.	55	20	10	20	45	10	10	10	10	20	10	20	33	15	24	10	20	15	28	15	22	20
	2.	10	10	10	15	10	15	10	10	15	15	30	15	10	10	10	13	15	14	20	15	18	14
	3.	10	10	10	25	10	15	10	15	10	15	10	15	10	13	12	10	20	15	10	15	13	13
	4.	10	10	10	15	15	10	10	25	15	20	20	20	10	18	14	13	18	16	18	15	17	16
	5.	55	35	40	30	60	30	20	25	10	20	20	10	38	30	34	25	25	25	40	20	30	30

*Omit

[nos. 1-5 indicate the five data points]

RAW SCORES - PROCESS SCALES
Group A_1

		1/2						1/2															
		PC		EXP		PES		PC		EXP		PES		$\bar{X}$PC		$\bar{X}$PC	$\bar{X}$EXP		$\bar{X}$EXP	$\bar{X}$PES		$\bar{X}$PES	$\overline{GM}$
		J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J12	J1	J2	J12	J1	J2	J12	
Subj. V.	1.	10	10	15	15	15	15	10	10	10	10	10	10	10	10	10	13	13	13	13	13	13	12
	2.	10	20	15	20	15	15	30	40	25	35	50	40	20	30	25	20	28	24	33	28	31	27
	3.	10	25	10	10	20	15	10	20	10	15	10	15	10	23	17	10	13	12	15	15	15	14
	4.	10	20	15	15	20	25	10	10	15	15	10	10	10	15	13	15	15	15	15	18	17	15
	5.	10	10	15	15	10	10	10	10	15	15	15	10	10	10	10	15	15	15	13	10	12	16
Subj. VI.	1.	10	25	15	30	30	30	10	25	10	25	10	20	10	25	19	13	28	21	20	25	23	24
	2.	15	10	10	30	10	10	10	25	10	25	10	25	13	18	16	10	28	19	10	18	14	16
	3.	15	10	10	15	10	20	10	20	15	20	10	20	13	15	14	13	18	16	10	20	15	15
	4.	10	10	15	25	30	25	15	20	15	15	20	20	13	15	14	15	20	18	25	23	24	19
	5.	10	35	15	15	15	25	40	25	15	20	25	20	25	30	28	15	18	17	20	23	22	22

Group B_1

RAW SCORES - PROCESS SCALES **

		1/2						2/2															
		PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
		J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J12	J1	J2	J12	J1	J2	J12	
Subj. I.	1.	10	20	15	15	25	10	70	30	30	25	55	15	40	25	33	23	20	27	40	13	27	39
	2.	30	10	15	15	40	35	30	30	15	30	40	40	30	20	25	15	23	19	40	38	39	28
	3.	30	40	20	30	40	45	10	10	10	15	20	15	20	25	23	15	23	19	30	30	30	24
	4.	30	30	25	25	50	15	25	35	15	25	40	45	28	32	30	20	25	23	45	30	38	30
	5.	10	10	15	15	10	15	30	25	15	25	10	15	20	18	19	15	20	18	10	15	13	17
Subj. II.	1.	10	25	15	25	20	20	15	55	15	25	20	20	13	40	27	15	25	20	20	20	20	22
	2.	10	10	15	15	50	10	40	40	15	30	40	35	25	25	25	15	23	19	45	23	34	26
	3.	10	10	15	15	10	15	10	25	15	25	35	20	10	18	14	15	20	18	23	18	21	18
	4.	10	15	10	20	15	15	10	30	10	20	15	15	10	23	17	10	20	25	15	15	15	19
	5.	10	10	10	15	10	10	10	10	10	15	10	10	10	10	10	10	15	13	10	10	10	11
Subj. III.	1.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	2.	10	10	10	15	10	10	10	10	15	15	10	10	10	10	10	13	15	14	10	10	10	11
	3.	10	10	15	30	15	20	10	10	15	15	10	10	10	10	10	15	23	19	13	15	14	14
	4.	10	10	15	25	15	15	40	25	15	25	25	25	25	18	22	15	25	20	20	20	20	20
	5.	10	10	15	15	10	10	10	10	10	15	10	10	10	10	10	13	15	14	10	10	10	11
Subj. IV.	1.	10	10	10	15	10	10	10	10	15	20	10	15	10	10	10	13	18	16	10	13	12	13
	2.	10	40	10	15	15	20	10	10	15	15	25	15	10	25	18	13	15	14	20	18	19	17
	3.	10	10	15	15	15	10	10	10	15	15	15	10	10	10	10	15	15	15	15	10	13	13
	4.	10	40	15	25	45	30	10	25	10	15	15	25	10	33	22	13	20	17	30	28	29	22
	5.	10	10	10	15	10	10	10	10	10	15	10	10	10	10	10	10	15	13	10	10	10	11

**[nos. 1-5 indicate the five data points]

RAW SCORES - PROCESS SCALES

Group B_1

		PC		1/2 EXP		PES		PC		1/2 EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
		J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J12	J1	J2	J12	J1	J2	J12	
* Subj. V.	1.	10	10	10	15	10	10	20	20	15	25	40	20	15	15	15	13	20	17	25	15	20	17
	2.	45	10	15	15	25	15	10	20	15	15	20	15	28	15	21	15	15	15	23	15	19	18
	3.	10	10	15	15	10	10	10	10	10	15	10	15	10	10	10	13	15	14	10	13	12	12
	4.	30	25	15	15	40	25	40	25	15	20	35	25	35	25	30	15	18	17	38	25	32	33
	5.	10	10	15	20	10	10	10	10	15	15	10	10	10	10	10	15	18	17	10	10	10	12
Subj. VI.	1.	10	10	15	15	30	30	10	10	15	15	35	25	10	10	10	15	15	15	33	28	31	19
	2.	30	10	15	15	10	10	10	20	15	30	35	15	20	15	18	15	23	19	23	13	18	18
	3.	10	45	15	15	40	40	10	10	15	15	10	10	10	28	19	15	15	15	25	25	25	20
	4.	40	35	15	30	50	40	25	30	15	25	40	30	33	33	33	15	28	22	45	35	40	32
	5.	10	10	15	25	10	10	10	10	15	30	10	10	10	10	10	15	28	22	10	10	10	14

*Omit

RAW SCORES - PROCESS SCALES **

[illegible] - [illegible]

Group C_1

		1/2						2/2															
		PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
		J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J12	J1	J2	J12	J1	J2	J12	
Subj. I.	1.	10	25	15	15	15	20	10	10	15	15	10	15	10	18	14	15	15	15	13	18	16	15
	2.	10	35	15	25	20	20	10	20	15	20	10	15	10	28	19	15	23	19	15	18	17	13
	3.	10	10	15	20	10	10	10	40	15	30	40	25	10	25	18	15	25	20	25	18	22	20
	4.	10	10	15	10	10	10	10	20	10	15	10	10	10	15	13	13	13	13	10	10	10	12
	5.	10	20	15	15	10	10	10	10	15	25	10	10	10	15	13	15	20	18	10	10	10	14
Subj. II.	1.	10	20	15	15	15	20	15	35	15	15	20	20	13	28	26	15	15	15	18	20	19	20
	2.	25	25	15	25	20	20	10	20	15	15	10	15	18	23	21	15	20	18	15	18	17	19
	3.	10	25	15	25	20	20	10	10	15	15	15	10	10	18	19	15	20	18	18	15	17	18
	4.	70	40	35	25	65	20	20	20	30	30	10	10	45	30	48	33	20	27	38	15	27	34
	5.	10	20	15	15	10	20	10	10	15	15	10	10	10	15	13	15	15	15	10	15	13	14
Subj. III.	1.	10	10	10	15	10	10	10	10	15	15	15	10	10	10	10	13	15	14	13	10	12	12
	2.	10	10	15	15	15	10	10	10	15	20	15	10	10	10	10	15	18	16	15	10	13	13
	3.	10	35	15	30	10	15	15	25	15	15	15	15	13	30	22	15	23	19	13	15	14	18
	4.	10	10	15	15	10	10	10	10	15	15	10	15	10	10	10	15	15	15	10	13	12	12
	5.	10	10	15	15	10	15	10	10	15	15	15	10	10	10	10	15	15	15	13	13	13	13
Subj. IV.	1.	10	10	15	15	40	15	25	20	15	20	20	15	18	15	17	15	18	17	30	15	23	19
	2.	10	10	15	30	30	10	10	15	10	15	10	15	10	13	17	13	23	18	20	13	17	17
	3.	10	10	10	15	15	10	10	10	10	15	15	15	10	10	10	10	15	13	15	13	14	12
	4.	30	10	15	20	40	15	40	50	35	40	50	40	35	30	33	25	30	28	45	28	37	33
	5.	10	10	10	15	10	15	10	30	15	30	20	25	10	20	15	13	23	18	15	20	18	17

**[nos. 1-5 indicate the five data points]

RAW SCORES - PROCESS SCALES

Group C_1	PC		EXP		PES		PC		EXP		PES		$\bar{X}$PC		$\bar{X}$PC	$\bar{X}$EXP		$\bar{X}$EXP	$\bar{X}$PES		$\bar{X}$PES	$\overline{GM}$
	J_1	J_2	J_1	J_{21}	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. V. 1.	10	10	10	10	10	15	10	10	15	15	15	15	10	10	10	13	13	13	13	15	14	12
2.	10	20	10	20	15	15	10	20	10	15	10	15	10	20	15	10	23	17	13	15	14	15
3.	10	20	10	15	10	10	10	10	10	15	10	10	10	15	13	10	15	13	10	10	10	12
4.	10	10	10	15	10	10	10	10	10	15	10	15	10	10	10	10	15	13	10	13	12	12
5.	10	10	15	15	10	10	10	10	10	10	10	10	10	10	10	13	13	13	10	10	10	11

1/2

2/2

RAW SCORES - PROCESS SCALE **

Group A_2

		1/2						1/2															
		PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
		J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. I.	1.	10	10	10	15	30	10	10	10	10	15	15	15	10	10	10	10	15	13	23	13	18	13
	2.	40	25	30	20	30	15	10	40	10	20	15	25	25	33	29	20	20	20	23	20	22	23
	3.	10	10	15	15	10	15	45	25	15	20	40	10	28	18	23	15	18	17	25	13	19	20
	4.	10	35	10	20	10	15	10	10	15	20	25	20	10	23	17	13	20	17	18	18	18	17
	5.	10	10	15	15	35	25	10	30	15	20	35	20	10	20	15	15	18	17	35	23	29	20
Subj. II.	1.	40	35	30	15	50	35	10	10	15	15	20	10	25	23	24	23	15	19	35	23	29	24
	2.	40	30	40	30	60	40	10	25	15	15	10	15	25	28	27	28	23	26	35	28	32	28
	3.	10	30	15	20	35	20	10	25	15	15	15	15	10	28	19	15	18	17	25	18	21	19
	4.	60	10	15	20	65	10	40	45	30	30	40	10	50	28	39	23	25	24	53	10	32	32
	5.	70	10	30	25	70	15	10	30	15	25	35	25	40	20	30	23	25	24	53	20	42	32
Subj. III.	1.	15	30	15	15	25	25	10	20	15	15	25	15	13	25	19	15	15	15	25	20	23	19
	2.	10	35	15	20	15	25	10	15	15	15	35	15	10	25	18	15	18	17	25	20	23	19
	3.	10	40	15	30	10	25	10	15	15	20	45	15	10	28	19	15	25	20	28	20	24	21
	4.	10	10	10	15	10	10	10	10	15	15	10	10	10	10	10	13	15	14	10	10	10	11
	5.	10	10	10	15	10	10	10	10	15	15	10	10	10	10	10	13	15	19	10	10	10	13
Subj. IV.	1.	10	20	15	25	35	30	10	25	15	15	20	15	10	23	27	15	20	18	28	23	26	24
	2.	10	10	10	20	10	15	10	10	15	15	20	20	10	10	10	13	18	16	15	18	17	14
	3.	10	10	10	15	25	15	40	10	15	10	30	10	25	10	18	13	13	13	28	13	21	17
	4.	60	60	40	30	70	20	40	10	15	25	40	20	50	35	42	38	28	32	55	20	38	38
	5.	40	35	35	30	55	30	10	30	15	20	30	25	25	33	29	25	25	25	43	28	36	30

**[:nos. 1-5 indicate the five data points]

RAW SCORES - PROCESS SCALES

Group A_2		PC		EXP		PES		PC		EXP		PES		$\bar{X}$PC		$\bar{X}$PC	$\bar{X}$EXP		$\bar{X}$EXP	$\bar{X}$PES		$\bar{X}$PES	$\overline{GM}$
		J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2	J12	J1	J2	J12	J1	J2	J12	
Subj. VI.	1.	10	10	10	15	15	10	10	10	10	10	10	10	10	10	10	10	13	12	13	10	12	12
	2.	30	30	30	25	40	40	40	30	45	30	60	15	35	30	33	38	28	33	50	28	39	35
	3.	10	10	15	15	15	10	30	30	30	40	40	40	20	20	20	23	28	26	28	25	27	26
	4.	20	20	15	20	25	20	40	10	30	15	40	15	30	15	23	23	18	21	33	18	27	24
	5.	10	10	15	15	25	15	30	10	15	15	35	10	20	10	15	15	15	15	30	13	22	17
		1/2						2/2															

Group B_2

RAW SCORES - PROCESS SCALES **

		1/2						2/2															
		PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
		J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. I.	1.	10	10	15	15	15	10	10	40	10	25	10	25	10	25	18	14	20	17	13	18	16	17
	2.	10	10	15	15	25	15	10	30	10	15	15	40	10	20	15	13	15	14	20	28	24	18
	3.	10	10	10	15	10	15	10	10	10	15	10	15	10	10	10	10	15	13	10	15	13	12
	4.	10	40	15	35	35	35	30	40	40	25	50	15	20	40	30	28	30	29	43	25	34	31
	5.	10	30	15	20	25	25	45	10	30	30	50	10	28	20	24	23	25	24	38	18	28	25
Subj. II.	1.	10	10	10	15	15	15	40	10	15	25	40	15	25	10	18	13	20	17	28	15	23	17
	2.	10	10	15	15	10	10	60	35	15	20	70	30	35	23	29	15	18	17	40	20	30	25
	3.	25	20	15	15	15	20	50	40	20	20	55	40	38	30	34	18	18	18	35	30	33	28
	4.	40	30	15	20	20	30	40	50	30	25	40	50	40	40	40	23	23	23	30	40	35	33
	5.	40	30	35	25	50	40	45	45	35	35	55	60	43	38	42	35	30	33	53	50	52	42
Subj. III.	1.	10	10	10	15	35	15	10	35	15	20	35	15	10	23	17	13	18	16	35	15	25	19
	2.	10	25	15	15	20	20	30	35	20	20	40	30	20	30	25	18	18	18	30	25	28	23
	3.	10	10	10	15	10	10	10	10	10	15	15	20	10	10	10	10	15	13	13	15	14	12
	4.	10	10	15	15	10	10	10	10	15	15	10	10	10	10	10	15	15	15	10	10	10	12
	5.	10	20	15	20	20	20	10	10	15	25	20	20	10	15	13	15	23	19	20	20	20	17
*Subj. IV.	1.	10	10	15	15	25	10	10	10	15	15	45	15	10	10	10	15	15	15	35	13	24	16
	2.	10	10	20	15	15	10	10	10	15	15	15	15	10	10	10	18	15	17	15	13	14	14
	3.	10	10	15	15	10	15	15	20	10	15	10	15	13	15	14	13	15	14	10	15	13	14
	4.	10	10	15	15	10	10	30	25	15	15	35	15	20	18	19	15	15	15	23	13	18	17
	5.	10	10	15	15	10	10	30	25	15	15	35	15	20	18	19	15	15	15	23	13	18	17

*Omit

**[nos. 1-5 indicate the five data points]

RAW SCORES - PROCESS SCALES

Group B_2	PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. V. 1.	10	10	10	15	15	15	10	45	15	20	20	15	10	28	19	13	18	16	18	15	17	17
2.	10	10	15	15	10	15	10	10	10	15	10	10	10	10	10	18	15	17	10	13	12	13
3.	10	10	15	15	15	10	10	10	15	15	10	10	10	10	10	15	15	15	13	10	12	12
4.	10	10	15	15	25	15	10	302	15	25	35	45	10	20	15	15	20	18	30	30	30	21
5.	40	10	15	15	50	30	55	30	30	25	60	40	48	20	34	23	20	22	55	35	45	34
Subj. VI.1.	10	10	15	10	15	10	10	10	15	15	40	10	10	10	10	15	13	14	28	10	19	14
2.	10	10	15	15	10	10	10	10	15	20	15	20	10	10	10	15	18	17	13	15	14	14
3.	10	10	15	15	10	10	10	10	15	25	45	15	10	10	10	15	20	18	28	13	21	16
4.	10	10	10	15	15	10	10	10	15	15	35	15	10	10	10	13	15	14	25	13	19	12
5.	10	25	15	25	35	40	35	30	30	30	40	30	23	28	26	23	28	26	38	35	37	30

1/2 2/2

RAW SCORES - PROCESS SCALES **

Group C_2

		1/2						2/2																
		PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
		J^1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. I.	1.	40	10	15	20	45	15	30	35	10	25	35	40	35	23	29	13	23	18	40	28	34	27
	2.	10	10	10	15	10	15	40	45	40	25	55	50	25	28	27	25	20	23	33	33	33	28
	3.	10	10	10	15	10	10	15	30	15	20	10	20	13	20	17	13	18	16	10	15	13	15
	4.	35	50	15	35	45	30	40	40	20	25	40	35	37	45	49	18	30	24	43	33	38	38
	5.	30	30	20	15	40	15	40	25	15	30	25	20	35	28	37	18	23	21	33	18	26	28
Subj. II.	1.	10	10	15	15	10	10	35	20	15	30	25	20	23	15	19	15	23	19	18	15	17	19
	2.	15	10	10	15	10	15	10	10	15	20	35	15	13	10	12	13	18	16	23	15	19	16
	3.	10	25	10	15	10	20	10	40	30	20	35	35	10	33	22	20	18	19	23	28	26	22
	4.	45	10	15	20	45	15	55	35	15	30	45	25	50	23	36	15	25	20	45	20	33	30
	5.	40	40	25	20	45	20	55	25	15	30	20	20	48	33	42	20	25	23	33	20	27	31
Subj. III.	1.	10	10	15	15	15	15	10	10	15	20	40	30	10	10	10	15	18	17	33	23	28	18
	2.	10	10	15	15	10	10	10	10	15	20	20	20	10	10	10	15	18	17	15	15	15	11
	3.	10	10	15	15	15	10	10	10	15	15	25	15	10	10	10	15	15	15	20	13	17	14
	4.	45	10	15	25	40	15	10	40	15	30	25	40	28	25	27	15	28	22	33	28	31	27
	5.	10	10	15	15	15	10	35	25	15	20	50	20	23	18	21	15	18	17	33	15	24	21
Subj. IV.	1.	10	10	15	15	40	15	60	35	15	20	50	15	35	23	29	15	18	17	45	15	30	25
	2.	10	35	15	20	35	10	50	10	15	25	45	10	30	23	27	15	23	19	40	10	25	23
	3.	10	45	15	25	40	15	10	10	15	20	10	10	10	28	19	15	23	19	25	13	19	19
	4.	20	30	15	15	20	10	10	25	15	15	30	15	15	28	22	15	15	15	25	13	19	19
	5.	10	10	15	20	20	20	35	30	15	15	50	30	23	20	22	15	18	17	35	25	30	23

** [nos. 1-5 indicate the five data points]

RAW SCORES - PROCESS SCALES
Group C_2

	PC		EXP		PES		PC		EXP		PES		$\overline{X}$PC		$\overline{X}$PC	$\overline{X}$EXP		$\overline{X}$EXP	$\overline{X}$PES		$\overline{X}$PES	$\overline{GM}$
	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_1	J_2	J_{12}	J_1	J_2	J_{12}	J_1	J_2	J_{12}	
Subj. V. 1.	10	10	15	15	30	15	45	30	15	15	20	15	28	20	29	15	15	15	25	15	20	21
2.	10	10	15	15	15	10	10	10	10	15	15	15	10	10	10	13	15	14	15	13	14	13
3.	10	10	10	15	10	10	40	50	30	20	40	15	25	30	28	20	18	19	25	13	19	22
4.	50	40	30	30	45	30	10	30	20	20	25	25	30	35	33	25	25	25	35	28	32	30
5.	64	60	35	40	65	70	10	25	15	30	15	20	38	43	42	25	35	30	40	45	43	38

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APPENDIX D

Bibliography

Appendix D

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